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The Journal of the Fire Protection Profession

NOVEMBER 26, 1930

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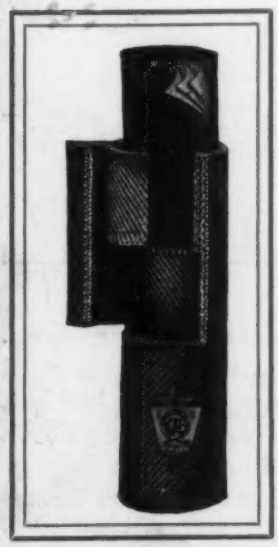
BUT IT IS CERTAINLY **BETTER**



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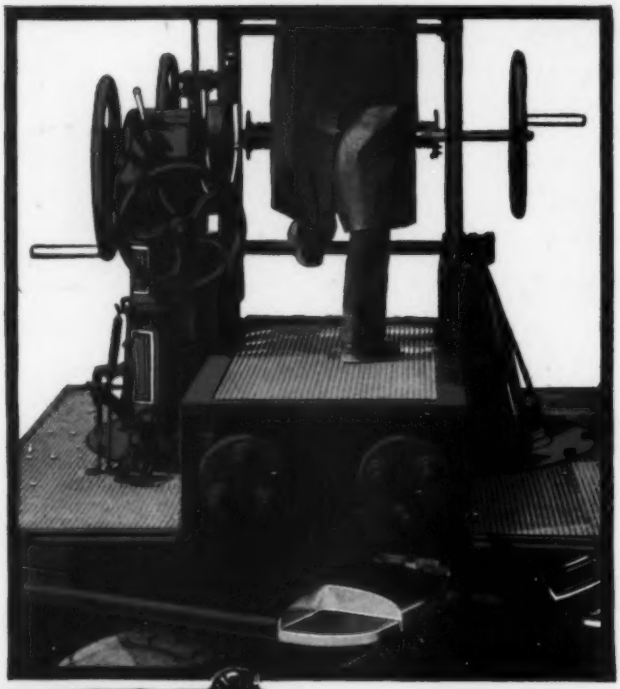

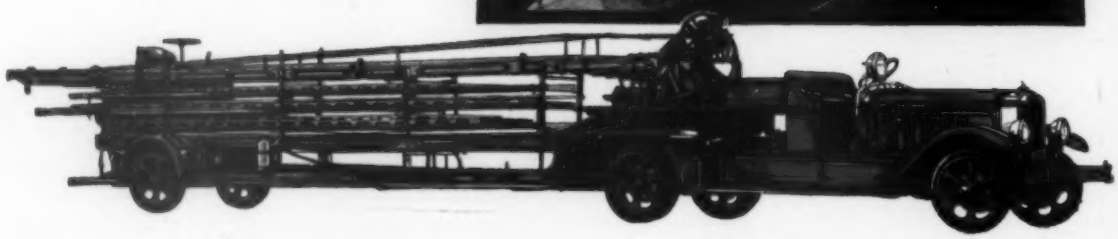

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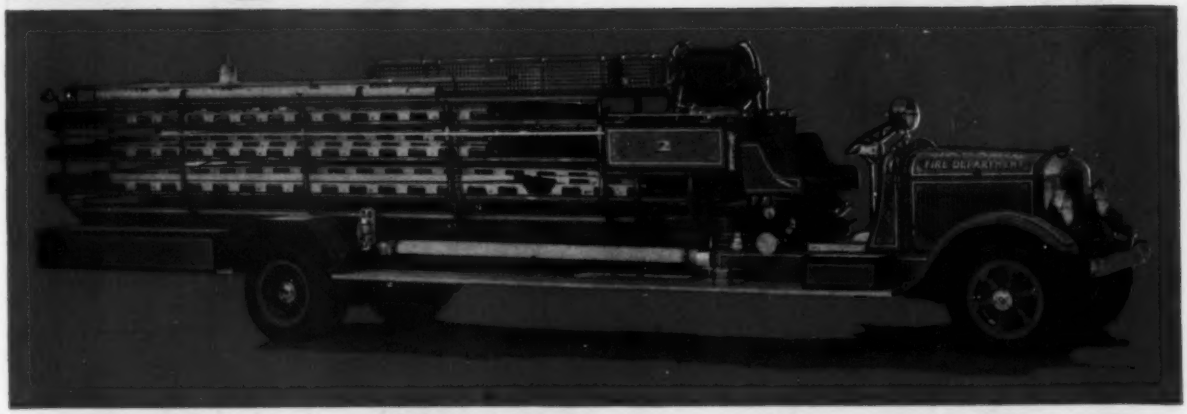

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FIRE ENGINEERING

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Above Criticism

WHILE we know that no publication can be entirely free from criticism, the great number of complimentary letters we are continually receiving from our readers makes us feel highly encouraged.

¶ For example, Chief T. P. Treadwell, head of the Fire Department of that progressive little city of Fort Collins, Colorado, writes as follows:

¶ What does FIRE ENGINEERING mean to every fire department?

¶ We refer to it to find the proper place to buy modern equipment; to learn how the other fellows do the job; what other departments are doing.

¶ I want you to know the real good we have derived from such articles as "Dust Explosions—How to Prevent Them," "Reducing Property Damage by Proper Salvage Methods," etc. And we purchased —— covers because every copy of FIRE ENGINEERING told us what other Fire Chiefs had done with them. I haven't time now to tell you how much we have accomplished with them on our squad truck.

¶ We are 100% for FIRE ENGINEERING, in view of the good it is doing us, and I wanted you to know.

T. P. TREADWELL,
Chief Fire Dept.,
Fort Collins, Colo.

The Publishers

CONTENTS

VOL. LXXXIII No. 24

November 26, 1930

Protection of the Public Institution from Fire, by Harry M. Nacey 1003
Automatic Fire Protective Systems a Great Help in Guarding Hospitals, Asylums, Etc.

Locating the Fire Alarm Box (Illustrated) 1005
Scheme Developed to Make It Easier for Man in Fire House to Locate Fire Alarm Box Pulled.

Tar Fires—More Smoke than Flame (Illustrated) 1007
As with Crude Oil, a Small Fire Makes a Great Deal of Smoke—Usual Methods of Procedure.

When Modern Civil Service Regulations are Valid, by Leo T. Parker 1009
Such Regulations Becoming More General and More Important Each Day—Legal Points Made Clear.

The Round Table 1011
Does Your Department Operate a Repair Shop? In Addition to Fire Department Repairs, Do You Believe It Wise to Do Work for Other City Departments? Has the Repair Shop Been Costly to Maintain?

With the Editor 1013
Comments on Current Events and Live Topics by Our Editorial Staff.

Questions and Answers 1015
Replies to Questions on All Manner of Subjects on Fire Fighting and Fire Prevention.

Recent Important Fires Specially Reported (Illustrated) 1017
Excelsior Factory at Pittsburgh Destroyed—Burnings of Two Weeks.

Fire Department Activities 1024
Newsy Notes from All Over the Country with Matters Firemanic.

Fire Department Improvements 1025
Record of Business Activities in the Fire Protection Field.

False Alarms 1030
Humorous Side of the Fire Protection Profession.

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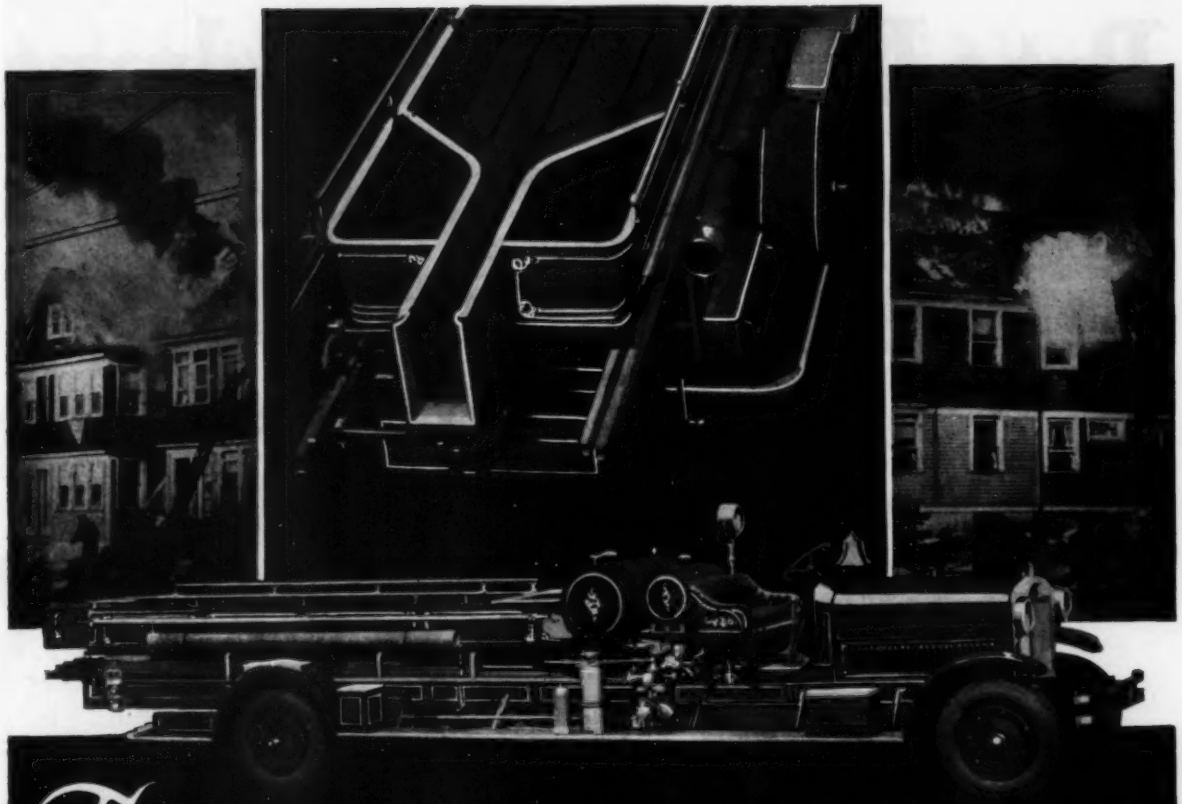

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FIRE ENGINEERING

(A Consolidation of Fire and Water Engineering and The Fire Engineer)

The Journal of the Fire Protection Profession

VOLUME LXXXIII NOVEMBER 26, 1930 NUMBER 24

Protection of the Public Institution From Fire

Automatic Fire Protective Systems a Great Help in Guarding Hospitals, Asylums, Etc.—Inflammable Buildings Especially Need Protection

By HARRY M. NACEY, President of the Illinois Fire Prevention Association

THIS paper offers a solution for the vexing problem of protecting hospitals, asylums and other public institutions from the danger of quick spreading fire, by controlling the blaze before it has had a chance to become a fire of large proportions:

How curious it is that even though modern science has furnished us with means to safeguard and protect the inmates of our institutions and the institutions themselves from quick, irreparable destruction, we have for the most part neglected to stretch out our hands, we have ignored the great philosophy of preparedness, we have neglected to guard our public charges from the enemy who forever lies in wait. In regard to fire protection we have thrown our science away instead of applying it to the needs and demands of every day life.

Eternal vigilance is not alone the price of liberty, it is the price of salvation—a salvation which in a measure has been intrusted to us.

Our national loss of life is large and the loss in property by fire alone amounts to one half billion dollars annually. The loss of life can never be replaced and those buildings which are destroyed can be replaced only at an enormous cost and consequent drain upon the economic resources of our State.

Heavy Loss in State Institutions

Following is an incomplete list of the losses by fire in Schools, Colleges and Institutions of Illinois:

Genoa	High School
Jacksonville	High School
Osco Center	School House
Westfield	United Brethren College
Casey	Westfield College
Benld	School Building
Carpenterville	Public School
Murrayville	High School
Mason City	School
Lincoln	State School Colony
Highland Park	Military Academy
Chicago	Immaculate Conception School
Chicago	Starret School for Girls
Springfield	Home for Friendless
Riverside	Scottish Peoples' Home
Peoria	Peoria State Hospital Laundry
Chicago	Arden Shore Fresh Air Camp
Joliet	State Prison—2 buildings of chair factory.
Dunning	Chicago State Hospital for Insane
Peoria	Proctor Hospital
Chicago	Volunteers of America Men's Home
Elgin	State Hospital
Geneva	State House for Girls.

And for every one of our State Institutions plundered and ravaged by fire there is an accompanying tragedy. There is the heart-breaking picture of panic stricken occupants struggling to escape the flames that trap them. Fragmentary pictures of Hell on earth follow every fire that breaks out in our Institutions. And then in the end there are, invariably, the long lists of those who are no more, and, sometimes, those sad lists include the name of an unfortunate loved one of our own. Those are losses that can never be replaced!

Remedies for Fire Loss in Institutions

Out of these ruins there will always emerge the shadow of a conviction that something should be done about it, some preventative measure that will forever erase such catastrophies from the history of our day. Two imperative needs cry out from the smouldering ruins that were once our proud institutions:

(1) Means for prevention of rapid spreading of flames.
(2) Means for quicker and easier egress from such buildings in the event of fire.

Eminent engineers, humanitarians and economists who have made an exhaustive study of this particular problem offer a sane solution to the question: "How can we best prevent the great toll of life and curtail the stupendous loss of property by fire in our public institutions?" They contend emphatically and without fear of contradiction that our great losses by fire can be positively eliminated if we equip our institutions with automatic fire protection systems.

Thousands of industrial plants over a period of more than fifty years have employed this means of safeguarding the lives of their employes and their property. The success of the protective measures they have taken by installing automatic fire protection systems has been most satisfactory. And

"An intelligent examination of even a limited number of institutional buildings will convince even the most skeptical of the present danger. Fire spreads in such buildings with appalling rapidity. Brick or stone walls add practically nothing to the safety of a building with a wooden interior."

it is significant that in all these years they have never suffered the loss of one single life, nor even a single building where the systems have been properly maintained. Indeed this is a fine tribute, a worthy monument to their vigilance and preparedness against fire.

Fire Insurance Companies would not cut their premiums from 60% to 90% if they were not sure of the efficiency of Automatic Fire Protection Systems.

Nominal Cost of Installation

Since these systems can be installed at a nominal sum, there is little reason to excuse the hazardous condition which exists today in our institutional buildings. Automatic fire protection systems could easily have prevented the holocaust at the Dunning State Hospital in Chicago and the prison fire in Columbus, Ohio. Also, if these systems warrant their use in factories, warehouses, stores and similar properties where day time use and physically fit occupants are the rule, it must follow that such protection is even more imperative in our Institutions which are occupied twenty-four hours of the day in the year, besides being tenanted by the sick, disabled and the helpless.

Hazardous Types of Construction and Inflammable Contents

Over 90% of our city, county and state institutional buildings are of frame, wood-joisted interior or other combustible construction, added to the fact that of a necessity highly inflammable articles are always present in the form of X-Ray films with their poisonous fumes, volatile chemicals or liquids, ether, alcohol, gasoline, oils and paints, together with cotton and other fast burning materials, each and every one a distinct fire hazard, which are liable to cause spontaneous combustion at any time.

These buildings present large areas without adequate provision for checking fire, smoke and poisonous gas which can spread from floor to floor by means of open stairways, elevator shafts, dumb waiters, clothes and rubbish chutes and various other openings. They are potential furnaces with masses of dry wood enclosed in oven-like walls awaiting but a single spark to kindle them.

German Firemen Believe in Keeping Cool

This is a novel kind of an extinguishing suit used by the fire department of Berlin, Germany, to enable the firemen to approach a hot fire.

An intelligent examination of even a limited number of institutional buildings will convince even the most skeptical of the present danger. Fire spreads in such buildings with appalling rapidity. Brick or stone walls add practically nothing to the safety of a building with a wooden interior.

Helplessness of the Inmates Adds Danger to Situation

In hospitals and asylums for Insane, Feeble-minded, Defective, Blind and Epileptic, there are shops for raffia work, weaving, printing, mattress making, baking, shoe repairing, painting, carpentry, tailoring, etc., each of which has its particular fire hazard.

Inmates of Sanitariums are helpless.

Inmates of Almshouses are often old and feeble and helpless.

Inmates of Institutions for the blind are especially susceptible to panic as their imaginations are developed to a high degree.

Inmates of Institutions for the deaf and dumb cannot hear fire alarm warnings and instructions.

Inmates of homes for the aged are partially helpless and in many instances the mental faculties are seriously impaired and they are as little children.

These conditions do not alone apply to City, County and State Institutions but equally to semi-public institutions such as orphanages and homes for the aged maintained by subscription and religious or fraternal organizations.

You realize that in this awful toll over sixty per cent have been helpless children.

You know the ordinary causes of destruction: impassable stairways, fast burning interiors and with fire escapes which are only a word, a fetish, a grill-work where people roast to death. Nevertheless, the public still puts its faith in wide stairways and fire escapes. You know what is needed is something to extinguish fire before it can render the building a death trap.

According to a report made by the Russell Sage Foundation, ten notable schools, two colleges, two hospitals, two jails, burn on an average of each week in the year.

Small Loss in Protected Institutions

Against the aforementioned list of tragedies, compare the small list of institutions in Illinois protected by Automatic Fire Protection Systems:

Chicago Polyclinic Hospital
Chicago Home for Aged Jews
Chicago Kenilworth Sanitorium
Chicago Mary Thompson Hospital
Chicago St. Luke's Hospital Training School
Winfield Sanitarium

Constructive Action Can Insure Protection

Records show clearly the need for increased fire preventative measures in all our city, county and state institutions. We should therefore, take advantage of the modern scientific safety measures and enable our institutions to benefit by the experience of the pioneers in the field of saving life and property.

It is a solemn duty to serve as spokesmen for thousands of unfortunates in Illinois who are of necessity seeking sanctuary from pain or spending their lives in institutions, and to arouse the concern of all in regard to the fire hazard. There is every indication that definite improvement can be achieved through the combined efforts of us all, but in order to make sure of this improvement we need the moral support of every official of the city, county and state.

If constructive action is started, we can look forward with the greatest confidence to a reduction of the loss of life and destruction of property by fire and, after all, if there is saved the life of one person, all the money and all the time and all the effort expended in the past or in the future will be well worth the efforts and expense.

(From a paper read before the annual convention of the Illinois Fire-Men's Association.)

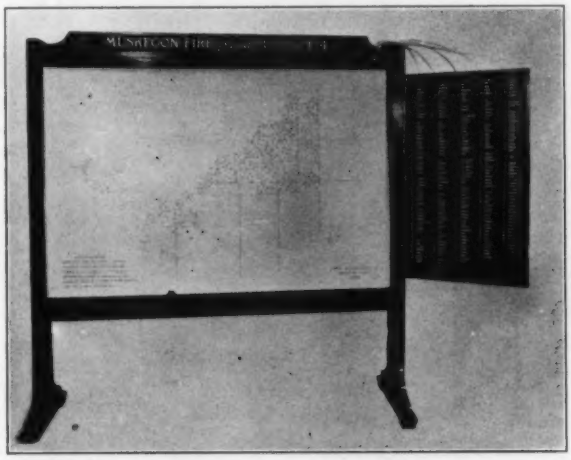
Cincinnati, O., to Have New Fire House—Plans are being drawn for a new fire station to be erected on Salem avenue, Cincinnati, Ohio. The work is being rushed to aid the city's unemployed.

Pittsfield Considers Cost of Station High—Action on the proposed bungalow fire station for the Fourth Ward of Pittsfield, Mass., has been postponed. When an estimate was secured, according to the plans drawn, the cost was found to be prohibitive.

Locating the Fire Alarm Box

Scheme Developed to Make It Easier for Man in Fire House to Locate the Fire Alarm Box From Which the Signal Was Flashed

MANY changes have taken place in the methods of transmitting fire alarms in recent fires. A few years ago residents of small cities (and even today residents of small villages) were aroused by the clanging of church or school bells. Any means possible was used to inform the community that a fire was raging and to call the volunteers to duty.



Muskegon Fire Alarm Board Showing Alphabetical List of Streets and Switches

Then came the telephone, an instrument which today plays a most important part in notifying fire fighting companies that fire has started its destructive work again in the community.

With telephones now more common as home equipment than ever before, the problem of letting the fire department know that there is a fire can be solved comparatively easily. But the telephone is not without its handicaps, according to fire chiefs and other officials, and they are very serious handicaps, indeed.

It is the general opinion among these officials today that the safest and most positive method of sending a fire alarm to headquarters is by way of the fire alarm box, located on the street corner or in public buildings. The principal reason for this belief is that most of the chance for human error is eliminated as the action is entirely automatic after a person pulls the box lever.

When the mechanical parts of a fire alarm box are set in motion the slow revolution of a notched wheel, called the break wheel, opens and closes the electrical circuit of the box. Every time a notch passes the contact point the circuit is opened thus interrupting the steady flow of current through the box and shutting off the current which holds the hammers of the various gongs in the fire stations in place.

The notched wheel is coded with the particular number of the box so that if three and four blows are struck in close succession it is known that the box number is thirty-four. As soon as the number is struck on the gongs the firemen refer to their filing devices for the number "34," find the location of the box pulled and proceed to the fire.

The efficiency of this system is evident. The chance for human error is almost completely eliminated. There are no excited voices to understand, only a mechanical box to obey.

In an effort to further eliminate mistakes in sending fire alarms by telephone or by the alarm box method, Edward R. Swett, Jr., of Muskegon, Michigan, has devised a new transmitting fire alarm system for use in Muskegon, which can also be installed in any city regardless of size.

In the new system more of the responsibility of the operator or sender of the fire alarm is transferred to the mechanical parts of the system thus further eliminating the chance for error.

The key to the system and the point about which it revolves is a large map of the city in which the system is to be used, divided into zones, districts and blocks, all of which are numbered. The map is equipped with a lighting system with bulbs for every street. The small electric bulbs are so placed that when switches opposite a list of the street names along the edge of the map are thrown, two lines of lights cross at the intersection of streets reported to be nearest the fire, this locating exactly the zone, district, and block of the fire.

The second most important feature of the system is the card file, copies of which are kept at the central alarm headquarters and at every fire station in the city.

Upon the cards kept in this file is the following information: The number of the card, the location of the alarm, the fire companies which are to respond to that location on the first, second and third alarms, and any other information necessary for the proper dispatching of fire fighting apparatus.

The card number, of course, corresponds to the zone, district and block numbers by which the nearest street intersection is designated. The system provides for four numbers for all boxes instead of a mixed system of one, two and three or more numbers for boxes. The advantage of having the same number of digits or every box having four numbers, is alone a great advantage. Under conditions found where one, two, three and even four numbered boxes are used, it is impossible for anyone to determine when the box first comes in as to what digit box it is. They are, therefore, placed at the disadvantage of not knowing posi-

Close-Up View of the Muskegon Board Showing Block Numbering Plan

tively when one round of the box has been completed. For an example, suppose that box "5531" was pulled. In their anxiety to respond to the alarm firemen left on the first two or three numbers, namely "55" or "553" and as soon as the apparatus had cleared the engine house the last one or two numbers came in. An error of this kind, of course, sends the apparatus to a different point in the city, and is liable to turn into a very serious error.

The first number gives the zone, the second the district, in the zone, and the third and fourth the block number. Each fire company is responsible for fires within its district or zone.

For instance, a fire alarm box in Zone (5) may be pulled and the alarm will come in to the central headquarters as "5531." The first digit designates Zone (5); the second marks the box location as in District (5), and the last two digits designate Block No. (31), the exact corner the box is located on.

When this signal has been received by the operator, it is a simple matter to relay the information to the fire stations where each captain can refer to his filing system, know wheer the fire is, if not in his own district, and where his company is to go on the second or third alarm.

When telephone alarms are received by the operator, levers opposite the names of the two streets given, or the street intersection on the map, will be thrown and the two streets will be lighted up by the small bulbs, showing instantly the zone, district, and block number. The operator then, upon getting this information, sets this number up on the transmitter which relays the calls to the various stations automatically. Consequently as far as the firemen in the engine houses are concerned, they get the call in exactly the same way as if the fire alarm box had been pulled on this corner, whether there is actually one located there or not.

One of the many advantages of the new system is the saving in time, by insuring that every company in the city will know the exact location of the fire within a few seconds after the gong starts ringing. Instead of relaying the information as to the location of the fire by mouth, the operator merely turns to the transmitter sending the proper numbers by the mechanical devices instead of depending upon human chances for error, caused by similarity of street names found in so many cities, mispronounciation, etc.

Zoning the city provides for unlimited territorial expansion in the future, as all that there is necessary to do when new territory is annexed is to put in new districts.

The problem of finding suitable numbers for new fire alarm boxes to be installed in the future is also eliminated as each street intersection has a number definitely established, and when a box is to be erected on any given corner, all that it is necessary to do is to get this number from the Fire Alarm Board and order the new box with that number.

This system has been installed in Muskegon, Mich., and Grand Rapids, Mich.

Jacksonville Opens New Alarm System

Fire alarm equipment of Jacksonville, Fla., which was previously located in an obscure corner on the second floor of Central Fire Station at the corner of Ocean and Adams Streets has now been moved to the new Fire Alarm Headquarters building at First and Laura Streets.

Construction of the new headquarters on the site isolated from the central downtown area was decided upon by the City Commission in recognition of insistance of the engineers of the National Board of Fire Insurance Underwriters. The new building conforms to the demands of the engineers both to location and fireproof qualities.

Located at the southwest corner of First and Laura Streets, the structure is an example of the tendency of a growing city to install fire and police alarm apparatus in buildings that are not only practical for the operation of such systems, but are also distinct architectural additions to their surroundings.

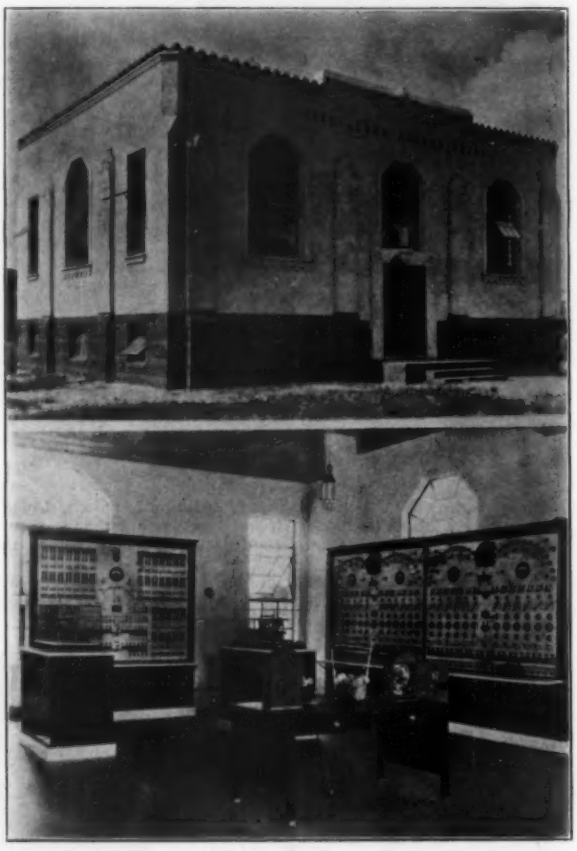
The old location in Central Fire Station has been for many years considered by fire insurance underwriters a hazardous one for the alarm system, because should a fire break out in the locality and the system be destroyed, the city would be absolutely without fire protection.

Fred M. Valz, Commissioner of Public Safety and Finance, is given much of the credit for this improvement. It was through his co-operation with the Geo. P. Allen, Chief of the Signal Bureau, who worked out the details of the project in conjunction with H. R. MacMillan, Chief of the Fire Department, that the new building was constructed.

The building is approximately fifty by thirty-five feet in dimensions. It is one story in height with a basement under the entire building. The basement is used for battery room, workshop and similar purposes, while the first floor is one large room with ample space for signal apparatus and like uses. The building was planned so as to provide space for additional signal apparatus for many years to come.

The present system consists of the following Gamewell apparatus and equipment: two twelve-circuit, automatic storage battery charging boards; one twenty-four-circuit protector and repeater control switchboard; two eight-circuit motor wound automatic repeaters; seven hundred six ampere hours, storage battery cells; one, 250-volt, 6 K-W shunt wound, D-C generator, direct connected to a 10 H-P, 220-volt, 60-cycle, three phase motor; one power panel for controlling generator output.

At the present time Jacksonville's fire alarm system is entirely automatic. The regulations set forth by the National Board of Fire Underwriters require all cities having more than six-hundred alarms per year to have manual fire alarm systems with two operators constantly on duty to receive the alarms and transmit them to the particular engine houses from which apparatus is to respond.



Upper, New Fire Alarm Headquarters of Jacksonville, Fla., and Lower, an Interior View of the Building

Jacksonville had twelve-hundred and forty-five alarms during last year. Plans are now being made to improve the fire alarm system next year by the installation of some additional apparatus at headquarters. The cost of the building is $16,000.

Apparatus Delivered to Keota, Ia.—Boyer fire apparatus has been delivered to Keota, Ia.

Seattle Opens Ravenna Station—Chief George M. Mantor of Seattle, Wash., had charge of the ceremonies that marked the opening of new fire house in the Ravenna district.

Butler Named Assistant Chief of Atlanta—William Butler, formerly Second Assistant Chief of the Atlanta, Ga., Fire Department, has been named First Assistant Chief to take the place made vacant by the death of Robert H. Pressly. Other assistant chiefs were also moved up one step.

The Tar Fire Makes a Sticky Job for the Firemen

In this particular fire, which occurred at Jersey City, members of the department moved tar barrels to a point of safety. Exposure to the heat of the fire made the job quite a sticky one for the force.

Tar Fires—More Smoke than Flame

As with Crude Oil, a Small Fire Makes a Great Deal of Smoke—Usual Methods of Procedure

THE average tar fire does not represent a big problem to a fire department, particularly where modern equipment is at hand. To the spectator, a tar fire may appear to be of tremendous proportions due to the great volumes of smoke commonly thrown off, but to experienced fire fighters a different story is told.

Most tar encountered in industries is made from coal. It is a black, viscous liquid, commonly shipped in tank cars and barrels, and stored either in tanks or in barrels.

It is used for waterproofing, paints, pipe coating, roads, roofing, insulation, production of benzol, toluol, phenol, lampblack and pitch, by distillation; it is also used in the manufacture of medicine.

When afire, tanks of coal tar are much easier to handle than are tanks of gasoline, kerosene or even crude oil. There is less danger of boil-overs, where streams are kept away from the burning tanks of tar, than is the case with crude oil, which may possess considerable water in itself.

But if water streams are thrown into burning tanks of tar, the tar will foam over very quickly, and carry the fire down the outside of the tank.

While intense heat is generated at tar fires, there is very little danger of explosion. If the tar is in cauldrons and if there is open fire beneath, there is always a possibility of the tar becoming ignited and boiling over and reaching the open fire beneath. But even in this case the danger of fire is comparatively mild if the building enclosing the cauldrons is of fireproof construction and if proper equipment is available for handling the blaze.

Empty tar barrels make a very hot fire, and one which is comparatively hard to extinguish due to the fact the tar within the barrels may be burning and it may be impossible to reach the insides of the barrels with streams.

In operating at a fire of this type about the only thing the department can do is to spray over the barrels thoroughly, wetting down the outsides, and then overhauling as rapidly as possible, extinguishing the inside fire as the department progresses.

In the case of cauldrons or vats taking fire, the most practical way of extinguishing the fire is to cover over the vats with sheet iron or similar coverings. The fire is quickly snuffed out by this process. Waterproof covers, wet burlap, oilcloth or similar materials may be used for snuffing out a fire in this manner. It is only necessary to stretch the covering over the cauldron or vat and in this way exclude the air from the zone of combustion. The fire is thereby automatically extinguished.

In the case of large tanks of tar, the task is not quite so easy, for it necessitates extinguishing the fire by the use of foam equipment if such is available.

Foam is discharged over the surface of the tar as in the case of the oil fire, the foam flowing from one side of the tank across and smothering as it proceeds.

The handling of fires in flowing tar, or fires in tar

spread over an open area, requires either foam or sand, sawdust or similar material. Water cannot be used in this operation because it carries the burning tar from point to point. Sand covers the burning tar, and thus extinguishes the fire. Sawdust works in a similar manner and is particularly effective if mixed with dry soda. The soda, upon being heated, releases carbon dioxide gas, which, retained by sawdust, forms a blanket over the surface of the burning tar.

If the burning area is small, burlap, wet gunny sacks or similar articles may be spread over the burning surface to extinguish the fire.

Compared with oil fires, the tar fire is an easy task for the average department. The chief precaution to take is to protect men against the flow of burning tar in the event that vats, tanks or other containers open-up during the fire, or in case they boil-over.

Massachusetts Chiefs Gather in Boston

Mutual aid was the topic for discussion at the meeting of the Fire Chiefs' Club of Massachusetts held on November 20 at the Parker House in Boston.

Chief Selden R. Allen, of Brookline, presided. The principal speaker was Harold S. Walker, of the National Fire Protection Association, who told of various arrangements for mutual aid between New England cities and towns in case of large fires.

Besides Chief Allen and Mr. Walker those at the head table were Chief Henry A. Fox, of Boston; Chief Mellen R. Joy, of Saugus; Chief Warren S. Belcher, of Winthrop; ex-Chief F. Burt Jaquith, of Randolph, Secretary of the club; Chief David A. DeCourcey, of Winchester; ex-Chief Young, of Littleton, N. H.; and Chief Joseph Kelly, of Danvers.

Chief John T. Oliver, of Marblehead, was elected as an active member and A. Lee Cowles, Boston representative of the Eureka Fire Hose Manufacturing Company, was elected as an associate member.

The question of purple lights to replace red lights on fire alarm boxes was discussed and it was suggested that it might be advisable to recommend legislation to make purple lights an exclusive color to be used only to denote fire boxes.

Among those who spoke briefly were Superintendent George L. Fickett, of the Boston Fire Alarm Division; Chief William C. Mahoney, of Peabody; ex-Chief Daniel F. Sennott, of Boston; Chief George L. Johnson, of Waltham; Chief John W. O'Hearn, of Watertown; Chief James M. Casey, of Cambridge; Chief Jeremiah Sullivan, of Fall River; Chief James Warnock, of Swampscott; ex-Chief Peter E. Walsh, now superintendent of the Boston Protective Department; Chief Henry A. Fox, of Boston; and Chief William J. Sands, of Quincy, who was welcomed to his first meeting since being elected to the club.

A new thermostatic fire alarm for home installation was demonstrated and explained by Leander S. Harding, of Worcester, who represented the Persons-Majestic Manufacturing Company. The device is known as the "Siro-Electric" alarm, a rise in temperature to a certain degree causing a siren to operate.

Chief Allen announced that Ladies' Day will be held by the club on December 17 at the Parker House.

Box 52, Association of Boston Meets

The dinner of the Box 52 Association, Inc., of Boston, held at the Hotel Manger on the evening of November 19, was interrupted by a third alarm from Box 1245 for a fire on the upper floors of an old stone building on Lewis Wharf. Chief Henry A. Fox, of the Boston Fire Department, and members of the association hurried to the scene, returning to the hotel later.

John W. Reth, Massachusetts fire marshal, was the guest and speaker at the dinner. Those seated at the head table were Deputy Chief Albert J. Caulfield, head of the Boston Fire Prevention Bureau; Supt. of Fire Alarms George L. Fickett, of Boston; Mr. Reth; P. Hildreth Parker, President of the association; Vice-President Frederick W. Kurth; Chief Henry A. Fox, of Boston; Deputy Chief William Quigley and Superintendent of Maintenance Edward E. Williamson, of Boston.

Among those present were ex-Chief Daniel F. Sennott, of Boston; Chief William C. Mahoney, of Peabody; Deputy Chief James F. Hanna, of Milton; Frederick Blake, Manager of the Back Bay Patrol and Emergency Service; Joseph A. Blanchard, Clifford D. Sawyer, Clifford T. J. Sennott, George Y. Berry, William E. Dolan, Herbert K. Pratt, Harry J. Rockett, Charles A. Turnbull, Chief John Galway, of the Boston Fire Alarm Division, Lawrence J. Phillips, Robert Hoeh, Robert E. Fay, J. G. Moulton, Bartlett Tyler, William B. Cram, W. B. Corcoran, S. J. Tyler, John A. Molloy, Guy R. Merrill, Howard K. Spaulding, Arthur M. Wall, L. J. Nawn, Stewart C. Woodworth, Walter L. Connolly, G. U. Johnson, K. MacBain, T. F. Kilduff, Charles J. Curtaz, H. Belknap, John Caulfield, H. W. deVeer, H. P. Windham, James McCarthy, John Z. Fox, Chief J. Ralph Bacon of Weymouth, Harold C. Turner, George W. Austin and L. S. King.

President Parker presented Chief Fox with a traveling bag in behalf of the association, expressing the hope that it might prove useful when the chief attends the International Chiefs' convention in Havana next year.

Several reels of motion pictures concluded the evening's entertainment. Two relics of the Great Boston Fire of 1872 were received as gifts to the Box 52 Association Museum from Chief Carl D. Stockwell, of Burlington, Vt.

HARRY BELKNAP.

Corinth Holds Local Fire School

The entire membership of the Fire Department in Corinth, Miss., participated in a one week's course conducted in Corinth for the benefit of the department and its guest M. R. Akers of the Tupelo, Miss., department.

The men were given instruction in tying knots, coupling hose, stretching hose, raising hose lines, ladder work, the use of special hose connections and rescue methods.

During the school week, talks on fire prevention were made before the employees of industrial plants, and the school children.

Those in charge of the school are very enthusiastic over the results achieved and plans are being made for the 1931 school which will be enlarged to include other departments in Mississippi.

The past school was held under the supervision of Chief W. L. Stroup of Corinth and Sherwood Brockwell, Vice-Chairman of the Fire Marshals' Section of the National Fire Protection Association.

Artists Held in World Arson Ring

On the advice of Fire Marshal Thomas P. Brophy, of New York City, two artists, a man and his wife, are being held on second degree arson. The accused are charged with attempting to defraud two insurance companies of $266,130 on 140 paintings burned in their studio on the night of October 26. It was said that excelsior and traces of gasoline were found in the studio.

Mr. Brophy testified that the paintings were brought into this country from South America in 1929 and had been appraised by U. S. officials at only $5,000. The paintings were shipped from Cordoba, Argentina, without being covered by insurance and it was not until March 28, 1930, that such protection was secured. Mr. Brophy said he learned through the exchange of cables with officials in a number of South American cities where the couple had formerly lived or were known that the list of paintings alleged to have been destroyed in the New York City fire contained paintings of the same title and authorship as paintings alleged to have been destroyed by fire in Buenos Aires, Argentina, on January 14, 1927.

The two artists told conflicting accounts. When confronted with copies of the cablegrams, they admitted the stories previously told, were false.

Arson Plot Found in Rome, N. Y.

Both the Police and Fire Departments of Rome, N. Y., are studying evidence which they believe points to the work of an arson ring that may have connection with other gangs. Fire was discovered in an oil-soaked house occupied by two families. The building was empty when the flames were discovered early in the morning by persons in an adjoining building.

Many holes were found cut through partitions, ceilings and floors to permit the fire to spread through the entire building with greater rapidity. Only good work on the part of the Fire Department prevented the flames from destroying the arson evidence. Two suspects were held for questioning by the police.

Yonkers, N. Y., to Erect Fire House—Bids have been received for the construction of a fire station in Yonkers, N. Y.

Stillwater, Minn., Purchases Apparatus—At a special meeting, the council of Stillwater, Minn., purchased G. M. C. fire apparatus.

When Modern Civil Service Regulations Are Valid

Such Regulations Becoming More General and More Important Every Day—Interpretation of the Courts—Legal Points Made Clear

By LEO T. PARKER, Attorney-at-Law

EACH day civil service laws and regulations become more important in fixing the legal rights of members of municipal fire departments. Also, the ability of public officials to determine the validity of regulations adopted by boards or commissions is an important factor in good government.

Therefore, the purpose of this article is to review several unusually important higher Court cases, decided during the past few months, in which are discussed interesting phases of the law involving these subjects.

Various Courts have held that it is no advantage to firemen, who in the course of their duties are constantly exposed to injury and death, to have included within the pension system a number of men who are not exposed to danger. In fact, it is a disadvantage, because the funds to support the system come from the public treasury. For these reasons, although generally pension laws are construed in favor of firemen, the Courts will not render decisions on uncertain points of the law in favor of persons who are employed in non-hazardous undertakings of the Fire Department.

For instance, in the late case of Carrick vs. Sherman, 288 Pac. 143, it was disclosed that a city ordinance was enacted which provides that all employes of the city with the exceptions of firemen and policemen, must belong to a protective system whereby they are required to pay each month from their salaries a specified amount for the purpose of maintaining the City Employes' Retirement System. Certain engineers and pilots of the city fire boats sued to prevent the municipality from deducting this money from their salaries on the contention that they are permanent members of the fire department and, therefore, entitled to benefits from the pension systems applicable to the fire department without payments of dues by the members.

During the trial evidence was introduced showing that the fire boat engineers and pilots were appointed by the Board of Fire Commissioners. Moreover, as shown by the minutes of the Board of Fire Commissioners, the appointments were all designated as temporary, and those temporary appointments to the same respective duties were renewed as temporary appointments at intervals.

At the time the engineers and pilots were temporarily appointed the Fire Commissioners were creating a new department which required permanent employes to fill permanent positions newly created. Why those positions were temporarily filled by the same men month after month was not revealed, but it was contended that since permanent employment was by law required in the department, the engineers and pilots were entitled to the benefits of the firemen's pension regulations. However, the higher Court held these temporarily appointed men not entitled to benefits of the permanent firemen's pension funds, saying:

"Having in mind that the board of fire commissioners, outside of civil service appointments, had only power to make temporary appointments we are compelled to hold that petitioners were not such members of the Fire Department as were entitled to the benefits of the relief and pension. . . . The presumption 'that a person acting in a public office was regularly appointed to it' is not applicable to one seeking to recover the salary attached to the office. . . . The same rule should apply when the benefits of a pension system are being sought. The burden was upon petitioners to establish their claim. This they did not do . . . If only the deserving reap the benefits, the public can be more generous with its appropriations. An engineer on a fire boat in San Francisco Bay is no more exposed to hazard than hundreds of other ordinary city employes."

When Employe Is Not Entitled To Pension

Ordinarily a fireman is legally a member of the city fire department so long as he is not discharged or his resignation is not accepted. Therefore, a fireman, who for any reason is given an indefinite leave of absence, remains a municipal employe and he is entitled to a pension for disability resulting from injuries or sickness.

In Simmons vs. Pension Commission, 150 Atl. 245, the state Legislature enacted a law, as follows:

"Any member of such police or fire department who shall have received permanent disability in the performance of his duty, shall . . . be retired upon a pension equal to one-half of his salary at the time of his retirement."

A municipal employe was seriously injured while performing his regular duties. He was badly injured, his skull being fractured, his ear drum ruptured, and other injuries sustained. He was sent to the hospital. Later he was discharged from the hospital as cured, although he was not cured by any means. Soon afterward he was asked to resign and refused to do so, whereupon he was placed on an indefinite leave of absence. On May 26 he wrote to the mayor asking to be returned to duty, but nothing came of it. This letter appears to have been placed before the board, and the matter was laid over until November 30, when he appeared personally and was told that there was no opening for him. On April 25 he asked to be put on the pension list.

It was argued that he was not entitled to a pension on the grounds that he was not a member of the department when he applied for a pension, and that he waived any rights he may have had by applying for reinstatement to active duty.

Notwithstanding this contention the higher Court indicated that he was entitled to a pension, saying:

"We do not think that there was such a waiver as to deprive the relator of any rights to a pension which he has or had. . . . It seems to be conceded that he sustained a severe injury in the performance of his duty, and we have just held that he had never ceased to have a status as a member up to the time of his application for retirement upon a pension."

Civil Service Law Held Non-Discriminatory

Generally speaking, a state law will be held valid and enforceable, if it is non-discriminatory and does not violate provisions of the state and United States Constitutions. Moreover, the fact that a statute is specially applicable to

"Where a proper classification is made, a law which operates uniformly upon all within the class has uniform operation throughout the state. . . . In construing a statute, the Courts will consider the language used, the subject-matter, the importance of the provisions, and the object intended to be secured, and ascertain the legislative intent."—Court Decision.

cities having a designated population does not render the law void on the grounds that all cities within the state are not affected. This is true although such laws are not exactly uniform since all cities and villages within the state are not equally affected. However, the law is uniform with respect to the particular class of municipalities designated.

For example, in State vs. Peterson, 230 N. W. 830, it was disclosed that a state Legislature enacted the following statute:

"There may be created in every city except cities of the first class, and in villages having a population of 2000 inhabitants or more, and having a regularly employed and paid fire department, a firemen's civil service commission with powers and duties as hereinafter provided. . . . "

Other sections of the law provide for the appointment, term of office, powers, and duties of the commission. The commission is given control and supervision over the employment, promotion, discharge, and suspension of all officers and employes of the fire department, but under civil service rules.

Suit was filed on the contention that the law is invalid, because it refers to a restricted class of municipalities. It is interesting to observe that the higher Court held the law valid, saying:

"It is conceded that the act regulates the affairs of cities and villages. It may be conceded also that the act covers matters which ordinarily, or at least very often, are regulated by the charters of cities and villages of the class therein covered. If the act is a local or special law, then it is unconstitutional. . . . Where a proper classification is made, a law which operates uniformly upon all within the class has uniform operation throughout the state. . . . The act is general in its terms. . . . In construing a statute, the Courts will consider the language used, the subject-matter, the importance of the provisions, and the object intended to be secured, and ascertain the legislative intent. . . . Construing the act before us, it seems reasonably clear that what the Legislature intended, and all it intended, was to grant to these cities and villages authority to establish a firemen's civil service commission and to prescribe the requisite proceedure for that purpose, leaving it optional with the municipality whether or not so to do."

Promotion in Violation of Rules is Void

The law is well settled that any *reasonable* rule adopted by a civil service commission is valid and enforceable. Moreover, any appointment or elevation of civil service employes made in violation of a recognized rule is void.

For illustration, in State vs. Listman, 287 Pac. 663, a rule promulgated by the civil service commission of a city provided:

"A competitor may inspect his examination papers, and upon a definite written showing of errors in marking or of errors in computing the results thereof, received by the Commission within thirty (30) days of the notice of the examination results, the Commission may review the points in question and make proper correction. In no other case will the results of an examination once completed be changed."

Here is One Way to Eliminate a Fire Loss

When flames threatened to wipe out the little village of Williamsburg, Ohio, the groceries and fixtures of a grocery store were hurriedly moved into the street. Even residents living in the fire zone carried their household goods into the street. Main street soon had a jumbled mass of personal effects. The 1,100 inhabitants were obliged to fight the fire for some time before help could be summoned.

Litigation resulted when the commission reviewed the examination of an applicant and raised his grades in the absence of a petition filed within thirty days as provided in the rule.

In holding this action void, the Court said:

"It will be noticed that in the last sentence of the rule it is expressly provided that the results of an examination once completed will not be changed unless a competitor makes a definite written showing of errors in markings, or errors in computing results, within thirty days of the notice of the examination results. The rule being valid, the question is, Was the commission required to abide by it? . . . The commission had no right of its own motion to review the grades and increase the standing of the officer."

Legal Definition of Veteran

Since numerous states have enacted laws granting special privileges to "veterans," the legal definition of this word is important.

For instance, in Scott vs. Commissioner of Civil Service, 172 N. E. 218, a state law was adjudicated which authorized the Commission to grant special privileges, such as making "veteran" applicants to fire department positions specified concessions.

A man named Scott sued to compel the Commissioner of Civil Service to place his name upon the eligible list of applicants for service in the fire department of the city upon the ground that he is a "veteran."

During the trial the testimony disclosed that Scott had made application to join the United States Navy and was sworn into the service on November 13, 1918. The armistice in the World War was signed on November 11, 1918. However, Scott served for several months.

The Commission refused to recommend Scott on the ground that he was not a veteran, within the meaning of the law, as follows:

"The word 'veteran' as used in this act shall mean any person who has served in the army, navy or marine corps of the United States in time of war or insurrection and who has been honorably discharged from such service or released from active duty therein."

The higher Court upheld the commissioner's refusal to grant special privileges to Scott, saying:

"It is doubtless true, as the petitioner argues, that, strictly speaking, an armistice is not the end of warfare, but is a temporary suspension of hostilities. All warfare ceased when the armistice was signed and hostilities were not thereafter renewed. We are of opinion that, so far as this statute is concerned, the war was then at an end. It is common knowledge that upon the signing of the armistice the war was actually at an end, and was so regarded by everyone. It cannot rightly be held that it was still in existence after November 11, 1918."

Widow of Fire Department Secretary Not Entitled to Pension

It is well settled that no act on the part of living persons can change the legal relations of a deceased person. For this reason the legal rights of dependents of a deceased remain the same as at the latter's death, irrespective of any acts of living persons which are intended to change the legal status. This rule applies with respect to all legal controversies such as liability for damages, wills, contracts, payments, deeds, mortgages, pensions, etc.

For illustration, in State vs. Williams, 230 N. W. 633, it was disclosed that a man named Weber had been the secretary of a municipal fire department for several years. His duties were in the office of the department and were purely clerical. On December 16, the Chief of the Fire Department requested his resignation for good cause. Weber executed a resignation in duplicate to take effect at once. Both duplicates were delivered to the Chief of the department. The latter handed them to the acting Secretary of the department, who placed one in the proper file in that department and by direction of the Chief filed the other with the Civil Service Commission on that same day, December 16. Mr. Weber died on the evening of the next day, December 17, from carbon monoxide poisoning while operating his automobile in his garage.

The important testimony was that on the following day, December 18, the acting Secretary of the Fire Department procured from the office of the Civil Service Commission the duplicate resignation and placed it in his own desk in the office of the fire department.

The widow of Weber applied to the Fire Department Relief Association to be placed on the pension roll of that association as the widow of the deceased. Her application was denied and she instituted legal proceedings contending

(*Continued on page* 1029)

THE ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

FIRE department apparatus and equipment does not wear out like the famous one-horse shay which was fortunate in having each part wear out at exactly the same time. In mechanical assemblies in which there are moving parts, the part of the machine that has the most movement or is the most delicately constructed, is apt to show signs of wear first.

If the apparatus is sent to some outside garage that is equipped with a repair shop, there is danger of the men not completely understanding the function of the various parts of the unit, or there is a possibility that more profitable work might be given the preference.

Apparatus that is driven through busy city streets runs the danger of damage from collision. As long as the public takes a keen delight in racing fire apparatus to the blaze, or refuses to yield the right of way on the road, the chances are very good that collisions will occur.

Unlike auxiliary or accessory equipment, when a major piece of apparatus such as a pumper or a ladder truck is taken out of service for repair, its complement of men is deprived of a means of extinguishing fires. In case there is no other equipment on hand to breach the gap when the main unit is out of service, the men must be added to other companies and the companies must cover a larger area. A properly equipped repair shop promotes and encourages inventive ability on the part of the men. In travelling about the country, visiting various departments, one is conscious of the large number of tools that have been designed and perfected by local men to simplify fire department operations.

If it is necessary to have the experimental work done in private shops, the fire department is not very keen to assume the cost of development work and the inventive person is rather backward about suggesting ideas that would entail an added expense to fire department maintenance.

All descriptions concerning new tools and appliances that have been designed by local firemen and have been published in this journal, mention that the model was constructed in the fire department repair shops.

Not all departments can economically support a complete shop fitted to make the more common repairs. Unless the department has a fair number of cars and pieces of apparatus, it is unwise to suggest that such a division be provided. But cities that feel there is sufficient repair work in the fire department to keep several men occupied adjusting defects in motors or making repairs, should, by all means, outfit and maintain a repair shop.

The problem that is discussed in this issue appears in the box on this page. In the box on the following page is the question that will be treated in the next issue. Should you have some comments that you would like to add to the next discussion, you are invited to write to the "Round Table Editor," FIRE ENGINEERING, 24 W. 40th Street, New York, N Y.

HERE IS THE PROBLEM

Does your department operate a repair shop?

In addition to fire department repairs, do you believe it wise to do work for other city departments?

Has the repair shop been costly to maintain?

Discussion of the Question

Wherever the fire department has established a repair shop, reports have been received that the move has been a wise one—repairs are made in a shorter period of time and at a considerably lower cost. Some fire bureaus, not very many, also do the repair work for other city departments. Most chiefs, however, advise against this practice. They like to feel that the repair shop is solely functioning for the good of the fire service. The comments received follow:

Frank Dickinson, Chief, Brockton, Mass.: Our department maintains not only a repair shop but also a shop for painting apparatus. The personnel consists of two machanics and two painters. The painters are firemen.

I believe it a very poor idea to do any repair work on any machine of any department not connected with the fire service. Our mechanics have enough to do keeping apparatus fit. Their time is paid for service in the fire department.

It would be impossible to determine the amount of money the repair department has saved the city. But more important than the saving in dollars is the time saved in getting apparatus back in commission after trouble. The repair shop means that you have men who know the apparatus and who are interested in keeping it in commission. The shop men are on call twenty-four hours a day.

Edward F. Dahill, Chief, New Bedford, Mass.: We operate a repair shop and repair all our fire apparatus, also make minor repairs to buildings.

I believe a fire department repair shop should be used for fire apparatus only. In my opinion a repair shop is a valuable asset to any fire department.

Occasionally we detail firemen to assist our repair force in emergencies and as all respond to second alarm fires, I do not figure that our repair shop has been costly to maintain.

L. J. Wilcox, Asst. Chief, Nebraska City, Nebr.: Our department consists of two paid firemen and twenty active volunteers.

We have been doing our repair work on fire trucks for twelve years, and since 1922 have done light repairs and overhauling on police machines, street department equipment including the building of a street

flusher which has been in service since 1925. Repair work has not conflicted with fire department runs or inspection. Repair shop equipment is owned by myself, the city replacing broken or worn out tools.

Wm. Briggs, Chief, Shelbyville, Ind.: We do not maintain a repair shop. One of the men on my force does the majority of the repair jobs for us, and when the task is too great for him to handle alone, we hire a mechanic and pay him eighty cents an hour. No repair jobs are handled for any other department.

The basic idea of the repair shop is all okay, but we found that everybody connected with the administration was having work done in the shop, which caused the maintenance cost to jump considerably. So out went our repair shop.

Cris W. Noll, Chief, Poughkeepsie, N. Y.: We have been operating our repair shop for about one year. It has worked out wonderfully well, and we have saved in repairs within that time double the mechanic's salary. We maintain only one master mechanic, the paid firemen being required to help him when he is working in their station or on their apparatus. This practice has worked out satisfactorily.

John T. Oliver, Chief, Marblehead, Mass.: Our department does not maintain a repair shop. We have a mechanic on the Board of Engineers who was with the American-LaFrance Company to take care of all our repairs. Therefore our machines are in excellent condition. Our machines are 750 and 500 gallons capacity and stood up well in their capacity tests this past summer. The 500-gallon machine is seventeen years old.

Ward A. Wantz, Chief, Anderson, Ind.: We operate a small shop for our own needs and do no work for other departments. I think taking in outside work is very unwise, for you can never do enough to please.

I find it costs about one tenth as much to do our own work as to have it done outside and I am better satisfied, from a safety standpoint.

Frank Charlesworth, Chief, Providence, R. I.: Our department maintains a well equipped repair shop and also a paint shop in which all apparatus of the department is kept in first class condition.

Under certain conditions which would eliminate entirely all confusion, I can see where it might be of advantage to a municipality to have other work done in such a repair shop. In my opinion it would make for economy.

Howard Beegle, Chief, Scottdale, Pa.: No, we do not operate a repair shop as we have only two triple combinations and two hose and chemical trucks. It is very seldom that we have any repair work to do.

If the department were large enough I would favor a repair shop. In such a case, I do not believe it should be used for the work of the other departments of the city.

S. H. Hannon, Chief, Duluth, Minn.: Our fire department maintains its own repair shop. Repairs for other city departments are not permitted to be done in our shop.

Repair shop expenses for the first nine months of 1930 are given below. Figures given do not include amounts spent on our sixteen pieces of heavy apparatus or seven light cars.

New equipment	$ 27.59
Cleaning	17.00
Shop tools, new	103.37
Other tools	86
Oxygen, etc.	43.61
Material for repairs	181.77
Stationery and office	1.67
Power	49.50
Light	22.72

Harry Schultz, Chief, Johnstown, Pa.: This department operates a repair shop. I do not think it wise to have the fire department repair shop do work for other city departments. Our shop has been a credit to the department.

Harry Voshell, Chief, Indianapolis, Ind.: The department operates a repair shop, which we find saves us about 50 per cent and at the same time enables us to keep our apparatus up to the highest standard.

E. V. Donavan, Chief, Greenville, Miss.: We maintain a repair shop for the fire department exclusively. I think it very unwise for the fire department to do any repair work for any other city department.

We find it very economical to do our own repair work.

J. J. Mulcahey, Chief, Yonkers, N. Y.: This department maintains a repair shop. Our shop has sufficient work on fire equipment to keep the men busy; we do no repair work for other city departments.

We utilize the city repair shop, light and power, with place for storage of stock at expense of salary for three men $9,000; also stock and parts of $4,000.

Whenever necessary, firemen are assigned to assist in repair work.

Rue Chrisman, Chief, Roswell, N. Mex.: The city maintains a repair shop for all city work, and employs first class repair men. Repair work for the fire department is given preference over that of other city departments.

R. D. Gambrell, Deputy Chief, Dallas, Tex.: The fire department maintains its own repair shop, which is not open for repair work of other city departments.

We save money by having our own shop. Five mechanics are employed, and are kept busy with fire department duties. We also maintain our own paint shop.

Otto Hackborth, Chief, Marinette, Wis.: We do not maintain a repair shop, but do as much of our own repair work as is possible.

The council at one time tried to start something of that sort, but we did not approve of it and the proposition was killed.

HERE IS THE PROBLEM FOR THE NEXT ISSUE

What do you figure the cost of outfitting each fireman with rubber coats, helmets, and boots?

What is the life of a coat? Boots?

What procedure do you follow to increase the life of these items?

E. P. Taylor, Chief, Cheyenne, Wyo.: We maintain a repair shop on a small scale which is employed exclusively for fire apparatus repairs.

Up to the present time this shop has been very economically maintained.

Edward Grenfell, Portland, Ore.: We do not operate a repair shop, all repairs to fire apparatus being done in the municipal shop which is operated independent of the fire department.

L. J. Kepping, Chief, Hazleton, Pa.: Our department does not operate a repair shop as yet, but they intend to have one going after the first of the year in which to do the repairing for all the city departments.

J. R. Meers, Chief, Waco, Texas: This department maintains a repair shop. I do not think it wise to do repair work for other city departments in the fire department repair shop. The operating cost of shop has been kept on a very economical basis.

R. H. Drum, Chief, Green Bay, Wis.: The fire department maintains its own repair shop, and we find it cheaper and more efficient to do so. We do not do repair work for any other city departments, and find our maintenance cost has not been very high.

Fred Lambert, Chief, Oshkosh, Wis.: We have a municipal garage where all fire department repairs are properly taken care of. We have been trying to equip a shop for fire department repairs only, and find it expensive.

Fred. Sahle, Chief, Fredonia, N. Y.: We maintain a repair shop for fire department repairs only. Upkeep of such shop is not very high.

Geo. Rehm, Chief, Mobile, Ala.: The fire department operates a repair shop, in which repair work for other departments is also handled. Maintenance of such a shop is not very high.

August Emrich, Chief, Baltimore, Md.: A fire department repair shop is maintained for the sole purpose of maintenance of fire apparatus and equipment. The cost of maintaining such a shop is quite moderate.

With the Editor

Safeguarding the Nation's Records

At last the documents of inestimable value as records of the nation on file in the Capitol at Washington are to be safeguarded from fire. It will be remembered that early in the year—to be exact, on January 3—a blaze in an artist's studio in the Capitol imperilled these papers which at that time were placed on shelves and exposed to both water and fire damage. In fact, quite a number of them were soaked with water at the time of the fire referred to.

Now every precaution has been taken to make all of the rooms in which these documents are filed fireproof and the papers have all been filed in steel cases. Some of these invaluable papers date back to the Nineteenth Congress, which convened in 1826, this being the first time printed papers were filed in connection with the national body.

The steel cases installed in these rooms now number thirteen thousand, and cost in the neighborhood of $45,000. No one can doubt that this is money well spent. The fire that occurred in the Capitol proved that. It was only by the best of good fortune and by virtue of the efficiency of the District of Columbia Fire Department, that many—if not all—of these practically irreplacable documents were not destroyed. To safeguard against the possibility of such a catastrophe happening to the Nation in the future, no amount of money spent in perfecting the arrangements for insuring the safety from damage to these papers can be too great.

No doubt there are other branches of the Government at Washington in which this precaution has not yet been perfected. In such cases, the quicker that provision is made to purchase fireproof containers for the papers and records filed away, the better it will be. One fire can wipe out the accumulated documents of years, and the confusion and inconvenience which inevitably follows such a loss, will prove much more expensive to the Government and its citizens than the purchase of a few steel cases.

Enlisting the Youths' Interest

Many successful efforts have been made to interest the youths of the country in the subject of fire prevention. Much good work has been done along this line through the Boy Scouts and kindred organizations.

A movement of this kind in Indiana promises to be particularly interesting and should be productive of the best results in increasing the knowledge of and interest in the work of lessening the fire loss of the country. It consists of a movement among the boys of the state looking toward the prevention of fire and will be known as the Indiana Guide Fire Patrol. The organization will be formed in connection with the Boy Guides, a society formed of country boys and numbering, it is said, some 20,000 members in the rural districts. Practical instruction in fire prevention, fire safety and the fighting of fire are to be given the members by a battalion chief of the Indianapolis Fire Department. The State Fire Marshal of Indiana is greatly interested in the success of the movement.

There should be in an organization of this kind a nucleus for similar organizations in other states. Some cities have junior fire departments and other organizations of boys which it is sought to interest in matters of fire prevention and fire fighting, and to them the Indiana plan, it would seem, would offer an excellent method of practical instruction in this line which would prove of especial value. Cities which have no such organization of youths could not do better than investigate the plan and take steps to follow the example of Indiana in leading the boys to a practical consideration of fire prevention service.

The boy will naturally take to this idea. What red blooded youth can resist the lure of the fire alarm and the following of the apparatus when it dashes past to a fire! To be considered a part of the fire-fighting forces of the city and to take part in the prevention of fire would be a chance few boys would pass up. The plan is well worth a trial.

Taking Care of Arsonists in Russia

While not quite in accord with our milder Western methods, the Russians have a strenuous manner of dealing with the incendiary which is, to say the least, effective. Three men were recently executed by the firing squad in Moscow for having caused a series of disastrous fires through criminal negligence, and with having interfered with the operations of the fire department.

The Ogpu—a species of Supreme Court of the Bolshevist government—caused the execution of these men, one of whom was the fire chief of a car-building shop, convicted of preparing fires in the establishment; another, a former lawyer and at the time holding the post of chief fire guard in four large factories, convicted of setting a fire in a factory; and the third, also a chief fire guard for government property, found guilty of setting fire to a big establishment. The latter fire, as described by an eye-witness, was the largest, and occurred in a building under construction, the outside wooden scaffolding forming excellent timber for a great blaze, the flames leaping to two hundred feet in height.

It is interesting to note, in this connection, that all three of these individuals were men intrusted with responsible positions in the matter of guarding the very establishments they caused to burn.

Another rather amusing incident in the same country is embodied in the case of a village which had collected some two thousand rubles (about $1,000) for the purpose of improving the fire department. Unfortunately, in this instance, the celebration of the improvement came before the money had been expended for apparatus, hose, uniforms, or what not, and instead it provided a plenteous amount of vodka for the celebrants. So much so, that there were no funds left when the festivities were over.

BOSTON OPENS ITS LARGEST FIRE STATION AT BOWDOIN SQ.

Building Has Accommodations for 73 Persons and Five Fire Companies—Designed by George Ernest Robinson—Description of the Station

By HARRY BELKNAP

BOWDOIN Square fire house in Boston, Mass., was placed in full service on November 15. It is one of the largest fire department buildings in existence, accommodating five companies and a district chief, with locker space for seventy-three officers and men.

The plans for the structure were drawn by George Ernest Robinson, of Boston, who has won nation wide fame for the excellence of his fire house designs.

The Bowdoin Square Fire Station Recently Opened

The building is constructed of steel and concrete with exterior of Indiana limestone and the interior finished in yellow brick. It is two stories in height with parapet in front and a 6-story drill tower in the rear. It occupies the site of the famous old Revere House and was built by Thomas O'Connor & Co., Inc.

The total cost was $650,000, including $300,000 for the land and $350,000 for the house. By consolidating apparatus in this house the old quarters of Ladder 24 and Engine 6 will be dispensed with.

The main floor of the new building has an area of about 8,780 square feet. This large apparatus floor is without posts or obstruction of any kind. There are seven double doors facing the square and one double door on Bulfinch Street. Two stairways and eleven brass sliding poles are provided, also three drop holes for transferring hose to the drying racks in the basement. In the rear of the main floor are placed a smoking room with pool table, wash basins and toilet, and kitchenette-dining room equipped with gas range. The alarm gongs and patrol desk are in an enclosed space at the front with microphone and loud speaker horns for announcing box numbers and locations.

The second floor contains seven rooms for officers, including the headquarters of the district chief. On this floor are a smoking room with pool table, library, five dormitories containing from seven to nine beds each, officers' wash room, men's wash room, large room for steel lockers and two rooms for "night hitch" boot lockers. The hall flooring is of composite material in black and white checkered pattern. The locker room has a long central passage through brick arches covering the steel trussing.

The officers' rooms and dormitories all have outside windows. The wash rooms are fitted with porcelain wash stands and the shower baths and plumbing are of the latest type. Two bubblers for drinking water are situated in the hallways. There is a circulating ice water system.

In the basement are closets for storage of company records and journals. There are lockers for company supplies on the second floor. House gongs and telephones are also provided on this floor.

The boiler room in a separate section in the rear basement contains two large boilers made by the U. S. Radiator Corporation with Nokol oil burners to provide steam heat. There is a 500-gallon hot water tank with automatic oil burner attached, and a 2500-gallon fuel oil tank. An electric ventilating system is provided. The electric switchboard and air compressor for inflation of tires are located in another compartment. There is a gasoline pump in the rear of the main floor.

On a traffic island in the square opposite the firehouse are red warning lights and a siren to signal when apparatus is about to respond to an alarm.

The new house is occupied by Engine Company No. 4, Engine Company No. 6, Ladder Company No. 24, Rescue Company No. 3, Water Tower No. 1, and the chiefs of District No. 4.

The apparatus consists of two 750-gallon American-LaFrance motor pumping engines, one high pressure hose wagon equipped with two guns or turret pipes which "rolls" with Engine 4, one combination hose wagon and chemical, one American-LaFrance water tower, chief's car, rescue car, and 85-foot aerial ladder truck. The rescue car is mounted on a Federal chassis and the district chiefs' cars are Hupmobiles. The rest of the apparatus is of American-LaFrance make.

On November 10 the first units moved into the house. Just as District Chief McDonough reported "in quarters," an alarm was received for a fire in the Sacred Heart Church in the north end and several hours later as Engine 4 was about to back in a man ran across the square to give a "still alarm" for a blaze at No. 7 Green Street. Thus a hustling opening was provided for what will undoubtedly prove to be the busiest house in the city.

Chief Belfy, of Muskegon, Honored

Many nearby fire chiefs and about two hundred business and civic leaders gathered at a testimonial dinner to honor Chief Napoleon Belfy, of Muskegon, Mich., on the eve of his forty-fifth anniversary in the service.

Among the visiting Chiefs who spoke briefly were: William Weeks, of Battle Creek; Peabody, of Albion; Maxwell, of Cadillac; Kuhn, of Pontiac; Pipple, of Grand Haven; Hanson, of Manistee; Fifaric, of Traverse City, and George Boughner, of Grand Rapids.

Assistant Chief Chris Smith presented Chief Belfy with a watch as a token of esteem from the members of the Fire Department and old-time firemen.

Following the dinner, a reception was given to Chief and Mrs. Belfy.

Apparatus Delivered to Tyler, Tex.—Mack fire apparatus has been delivered to Tyler, Tex.

Chief E. E. O'Brien Heads Forestry Group—Chief Ernest E. O'Brien, of Milford, Mass., has been elected President of the Blackstone Valley Forestry Association.

Ex-Chief Parker of Weston, Mass., Buried—Funeral services were held on October 31 for Benjamin R. Parker, for many years Chief of the Fire Department in Weston, Mass.

Purple Lights for Fire Alarm Boxes—Brookline, Mass., will place purple lights on all fire alarm boxes as it is believed red lights are too easily confused with traffic stop lights.

Questions and Answers

NOTE—Readers are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified

Comparative Protection for Window Opening

To the Editor:

I would appreciate in one of your early issues a statement as to your views on the relative merits of iron shutters vs. wire glass and open sprinklers, from a fire-fighting and fire-protection standpoint.

W. H. H.

Answer: The advantages of iron shutters over other types of window protection are: endurance under wear and tear and exposure to weather.

The disadvantages include difficulty of obtaining standard construction and hanging, expansion and warping under severe heat, radiation of heat, excessive weight, thus making closing more difficult and hence less likely. Because iron shutters are not an integral part of the building and are thus likely to be left open frequently, their quality as a means of protection against exposure to fire is reduced. Furthermore, they readily conduct heat and radiate such to combustible materials within a building and thus are likely to permit fire to enter into building.

Iron shutters will stand greater heat before complete failure than will wired glass windows, the glass of which may melt in the neighborhood of 1600 degrees Fahrenheit.

While it is true that wired glass radiates heat to such an extent that combustible material may be ignited on the side away from the fire, nevertheless this feature, as well as the tendency to melt, has proven to be of relatively little importance in actual practice. Wired glass windows are well maintained and normally closed, whereas fire shutters, as noted previously, commonly are installed to bring about insurance rate reduction, and very commonly are improperly maintained, let alone regularly closed at the end of the working day.

Based on actual experiences at fires, it may be said that wired glass has provided the better protection than sheet iron shutters, although the latter, kept closed at all off-hours as well as promptly closed in the event of fire in neighboring buildings, would prove the better protection of the two.

With reference to open sprinklers, by which it is assumed you refer to water curtains which are commonly employed to protect windows and other openings, the following comment by a committee reporting to the New York Board of Fire Underwriters answers your question:

"We are confident that open sprinkler systems kept by high pressure fire service mains cannot be relied upon as a conflagration barrier and should not be introduced to the exclusion of the more positive protection to be afforded by standard wire glass windows and shutters, which latter, we believe, should be required at all street fronts in exposure districts."

Conversion of a Chemical Tank

To the Editor:

Please tell me whether satisfactory results could be obtained by converting a 40-gallon chemical tank to a booster by tapping the bottom for a 2-inch pipe to feed an American-LaFrance 750-gallon pump.

What I have in mind is to tap the intake side of pump and the bottom of the tank for a 2-inch pipe and connect with gate type control valve to regulate the flow of water from the tank to the pump. The discharge side of the pump would be tapped for a ¾-inch chemical hose and by removing the acid container and cage in the filling port of tank, it will hold about fifty gallons of water. By keeping the pump primed at all times, do you believe that the idea would give results?

R. M.

Answer: The proposed use of the chemical tanks as a 50-gallon booster tank is perfectly all right. Whether the water is stored in the regular water tank or a revamped chemical tank should make no difference.

Of course, the water in this tank would only last for a few minutes as the displacement of the 750-gallon pump is 1.29 gallons per revolution. This means approximately fifty revolutions will completely discharge this tank and the engine would only be operating at a very slow idle.

Placement of Engines

To the Editor:

I will appreciate your advising me which of the two persons is correct in the following discussion:

A. contends that, pumping by draft and in relay, a 750-gallon capacity pumper placed at water with a 1,000-gallon capacity pumper connected (relayed) at a distance would deliver more water than placing the 1,000-gallon pumper at the draft with the 750-gallon pumper at a distance.

B. contends that the 1,000-gallon capacity pumper should be placed at draft with 750-gallon capacity pumper relayed (connected) at a distance.

A. O. L.

Answer: The point at which the larger pumper should be placed is determined entirely by the layout of the relay equipment. If the second engine is placed in the center of the line then this second engine should be the 1,000-gallon pumper and the smaller engine should be placed at suction. On the other hand, if there is considerable lift for the engine at suction or if the second engine is placed at a point from the first engine more than half the distance between the first engine and the nozzle then the larger engine should be used at suction and the smaller engine in the line.

Piston Pumpers in Tandem

To the Editor:

I would appreciate it very much if you will furnish me with an answer to the following question through the columns of your valuable paper.

Will any of the valves or gauges on a piston pump be injured by reason of another pumper taking its supply from the discharge outlet?

As an illustration: Pumper No. 1 is operating a 1-inch booster line. A 2½-inch line of hose has been connected to the hydrant, which is some distance away, to act as a suction. Another booster line is required, and after its tank is empty, pumper No. 2 connects a 2½-inch line to the discharge outlet of No. 1, to act as a source of supply. The pressure at the hydrant is 40 lbs., the pressure on the booster lines being about 100 lbs.; each line operating with a 2½-inch tip.

I have heard that such a hook-up is injurious to the valves and gauges of a piston pump and am unable to understand why, if such is the case. J. M.

Answer: There is no reason why any of the parts of a piston pump should be injured by reason of another pumper taking its supply from the discharge outlet.

As a matter of fact, the practice of hooking two engines in tandem to secure high pressure is commonly employed at present in Fire Departments in larger cities in this country and no damage has ever been reported from such procedure. Pumping engines as built today are by no means delicate contrivances, but on the contrary, can stand severe usage

without danger of falling down. It is hard to conceive any type of hook-up employing two engines which would be injurious to either, if common sense is employed in operating the pumps.

Pipe Friction and Gas Leaks

To the Editor:

Will you kindly answer the following questions?

How much greater is the friction loss in 4-inch pipe than 6-inch?

In a false and true question is it advisable to use water on gas and ammonia leaks? Can you explain?

P. G. J.

Answer: In answer to your first question we would say that the friction loss in four-inch pipe is approximately seven times that in six-inch pipe, for a given flow. Of course, for higher or lower flows this ratio would not hold, but it is a fairly good average.

In answer to your second question, if you were asked to state whether or not it was advisable to use water on gas and ammonia leaks, you would answer this "yes," or if it were in the form of a false or true question you would answer "true."

Water will absorb tremendous quantities of ammonia gas and in addition it will cool off ammonia or other gas containers thereby reducing the gas pressure within. Hence it is excellent practice to use liberal quantities of water on ammonia fires for it reduces the danger to the men operating around the fire and also tends to check further release of gas to bursting cylinders or leaks in pipes within which the gas is present under pressure.

Checking Spontaneous Ignition

To the Editor:

We have had several small fires at our waste reclaiming plant and soaking vats that were caused by spontaneous combustion.

It is my belief that the waste being kept on draining board will ignite as a result of being unusually dry, and the temperature in the vat increases from the radiation of the steam coils.

All our soaking vats are steel and practically air tight and the waste must be kept on the drainage board to lose its lubrication.

Please advise me if by keeping the steam off the soaking vats and having them arranged with netting so that they will not be air tight while closed at night, the waste will be prevented from igniting by spontaneous combustion.

B. J. W.

Answer: If the fires you have had in your waste reclaiming plant and soaking vats have been caused by spontaneous ignition, the method you suggest for ventilating the material at night should go a long way toward preventing future fires. Spontaneous ignition is the result of generation of heat within the material, such heat not being carried away as fast as it is generated. If ventilation is provided so that the heat upon being created is removed by surrounding air, there will be no danger of spontaneous ignition. There are practically no commercial by-products which will ignite spontaneously if they are so kept so as to permit free circulation of air through and around them. Of course if the waste is piled in large piles of considerable depth so that the center of the piles can heat, and the heat is not given chance to escape, spontaneous ignition will likely continue.

Fire in Stored Coal

To the Editor:

We have had a new experience and wish to have all information possible on the matter.

One of our schools put in 60 tons of coal; this was piled to 9 feet in some places in basement.

Spontaneous combustion started and set fire to board partition of coal bunk. There was considerable gas throughout the school.

1. What caused this heat?

2. Was there any danger of explosion in entering with open lights?

3. Was there any danger from gas to men working in basement?

4. Would you consider it dangerous to pupils to keep them at lesson, while coal was being removed?

5. Is there more danger of heating if coal is put in "wet down?" We picked up two pieces of coal the same size, one weighed 1 lb. and other only ¼ lb. The lighter piece was not burned.

6. What did the coal lose to cause this difference in weight?

7. What kind of gas was formed by this coal heating?

8. Was it lighter than air?

W. C. T.

Answer 1: Soft coal is subject to spontaneous ignition if piled in deep piles. This coal is subject to spontaneous ignition in proportion to its dampness up to a certain degree. If the coal is fairly damp, spontaneous ignition takes place quite readily, where if it is thoroughly dried, there is little liklihood of spontaneous ignition.

But most soft coals contain within themselves sufficient moisture to cause spontaneous ignition even though they are not in an apparently dampened condition. On the other hand if the coal is not piled deep, it is not likely to take fire. It takes considerable time for the coal to become heated through chemical action incidental to spontaneous ignition, and the heat is radiated through the atmosphere as fast as it is generated with the result that the temperature never reaches the point of ignition of the coal.

Wooden uprights placed in contact with piles of bituminous coal increase the liklihood of spontaneous ignition through the tendency of such uprights to permit air to get to the coal at the bottom of the pile.

Answer 2: Yes, there was distinct danger of explosion if a man entered the basement with open light.

Answer 3: Yes, there was a danger to the men from the gas in the basement. As the gases distilled from coal are toxic, and as these gases were not burned as they were generated, there might have been a very high concentration of these gases in the basement with the result that men operating therein would be exposed to asphyxiation.

Answer 4: It would be dangerous to keep the pupils at work while the coal was being removed, particularly if the gas was of sufficient intensity to ignite. Ignition of the mixture of gas with air might have caused an explosion which would have wrecked the building.

Answer 5: Yes, there is more danger of spontaneous ignition if coal is put in after being wetted down.

Answer 6: The coal probably lost a great deal of its volatile gas content as well as well as moisture, which caused the difference in weight.

Answer 7: Coal gas, which included carbon monoxide among other ingredients.

Answer 8: The probability was that the gas generated was lighter than air, although this point would depend entirely upon the ingredients in the gas.

Tugs Fired by Flaming Oil

Two tugs and a tanker tied up at the Barge Canal terminal at Troy, N. Y., were set afire when floating oil and gasoline on the surface of the Hudson River in Troy harbor ignited. The fire caused an explosion on the tanker which shook Troy and Watervliet. A ladderman of the Troy Fire Department was removed to a local hospital after being blown into the water.

Members of the crews of the three vessels, who were blown overboard, or who jumped into the water to escape the flames, suffered only minor injuries.

It is said that a tanker which had tied up at a point fifty feet north of the damaged vessels had discharged water ballast containing oil, contrary to marine regulations, and had then moved on down the river.

Much damage was done to buildings and windows in Watervliet. The shock was felt in school buildings and at the City Hall.

Fire Station for Aviation Field—Bids will be opened soon for the construction of a fire station at Wright Field, Dayton, Ohio. The station will be constructed of brick and will be two stories high.

EXCELSIOR FACTORY AND WASTE PAPER WAREHOUSE DESTROYED

Five Alarms Turned in to Fight Pittsburgh Blaze—Originally Started as Two-Alarm Fire—Rekindled When Fire Companies Left

By WILLIAM E. PATTERSON

FIRE PREVENTION DAY, Thursday, October 9, came to a close in Pittsburgh, Pa., with one of the largest and most spectacular night fires that has occurred in the city for many months.

A two-alarm fire, which had burned for three hours was practically extinguished and most all of the fire companies had returned to quarters, when it broke out in new and intense fury. It swept through a large three-story brick factory and warehouse located at 2535-7 Liberty Avenue, at the northwest corner of Twenty-Sixth Street, a congested manufacturing and warehouse district. It was occupied by the Excelsior Supply Company and the M. B. Speer Company, dealers in waste products. The fire department had a difficult three-hour fight.

The fire originated from some unknown cause on the first floor of the structure occupied by the Excelsior Supply Company. It was first discovered by a motorcycle patrolman, shortly before 6:00 p. m. He sent the first alarm at 5:56 p. m., one short block from the burning building. The call was answered by Engine Companies 7, 25 and 2 and Truck Company 25, in command of Battalion Chief William H. Davis of the Third Battalion.

Upon the arrival of the first alarm companies, heavy clouds of smoke were rolling from all parts of the structure, back of which the flames were gaining headway and threatening to sweep the entire structure.

Battalion Chief Davis, upon his arrival, seeing that a bad looking fire was in progress, and that more help would be required, immediately sent in the second alarm at 6 p. m. It was answered by Engine Companies 6, 32 and 33, Truck Company 3, and Deputy Chief Frank G. Jones, in command of the Fire Department during the absence of Chief of Department Richard L. Smith, who was attending the Pennsylvania State Firemen's Convention at Allentown, Pa.

The firemen under the direction of Deputy Chief Jones and Battalion Chief Davis, fought their way through the dense smoke into the Excelsior Company's building to the seat of the fire. Flames were found in hundreds of bales of excelsior piled to the ceiling against the western wall of the building.

After a hard fight, the fire was brought under control, and practically confined to the first floor of the Excelsior Company's structure, only a small amount of fire being discovered on the second floor which burned through the small open spaces between the ends of the floor joists and the west wall of the building. A few bales of excelsior were set afire but the blaze was quickly extinguished by the firemen. No further signs of fire were found on the upper floors of the building after a thorough inspection by Deputy Chief Jones and Battalion Chief Davis.

Deputy Chief Jones and practically all of the first and second alarm companies had returned to their respective quarters only a couple of companies remaining at the ruins, to overhaul and wet down the hundreds of bales of excelsior.

Building After Weakened Walls Had Been Torn Down

The second outburst of the fire took place on the second and third floors of the Excelsior Company's building as well as the second and third floors of the tag and paper warehouse. Flames burst out as though the interior of the building had been saturated with gasoline.

Chief Davis immediately sent in the third, fourth and fifth alarms at 10:40, 10:42 and 10:43 p. m., a period of four hours and forty minutes after the first alarm. The three additional alarms, called nine engine companies and one truck company plus two Battalion Chiefs, as well as recalling Deputy Chief Jones and the companies that had returned to quarters from the first fire.

The third alarm was answered by Engine Companies 3, 14 and 18, the fourth, by Engine Companies 48, 28 and 5 and the fifth alarm, by Engine Companies 42, 30 and 26 and Truck Company 9. Battalion Chiefs Louis Steckle of the Sixth Battalion and John H. Frazier of the Fifth Battalion responded.

Thousands of persons crowded the streets outside of the fire lines established by the Police Department, while thousands of others, including occupants of several motor cars, lined the Bigelow Boulevard, overlooking the Pennsylvania Railroad passenger coach and locomotive yards and the doomed factory and warehouse building.

At midnight, firemen faced a new obstacle. Surface sewers for several blocks around the burning building became clogged and failed to carry off the excess water which flowed in torrents from the first floor of the burning building to the street. Near the building, the water stood level with the curb, hampering the firemen in moving around the burning building.

Street lights were extinguished for two or three blocks on either side of the structure, after the electric current was shut off by employes of the Duquesne Light Company, while the trolley car service in Penn and Liberty Avenues, was paralized for a number of hours.

Firemen fought the fire from all four sides of the burning building, from the streets, aerial and extension ladders and the roofs of surrounding buildings, with eighteen powerful high pressure pumper streams, including two large deck turrett streams, and ten hydrant streams, with 1⅛ and 1¼-inch tips on the nozzles.

Large water mains and plenty of hydrants with pressure from 90 to 120 pounds, furnished the firemen with an abundance of water. The department connected 500 feet of 3-inch, 181,650 feet of 2½-inch and 850 feet of 1-inch lead line hose, all cotton rubber lined.

In addition to the above, 400 feet of chemical hose and 904 feet of ladders were used during the fire.

The two deck turrett streams, with 1¼-inch tips on the nozzles, each supplied with pressure through three lines of hose, did excellent work in driving the flames back into the building.

The increased weight and expansion of the many large bales of rags and waste paper, resulting from the tons of water thrown into the burning building by the many high pressure fire streams, caused bulges to appear in the walls.

Chief Jones, after discovering the dangerous condition of the walls, ordered all firemen who were working on the different floors of the structure to shut down, remove their lines, and vacate the building.

Later on in the day, after the ruins of the building were

inspected by the Bureau of Building Inspection, the dangerous sections of the walls were torn down.

The burned building which fronted 88 feet on Liberty Avenue and extended along Twenty-Sixth Street, a distance of 100 feet, was of the old type of brick and wooden joisted construction, divided in the center by a party wall, with openings on each floor and an iron fire escape in the rear of the building.

The building which was formerly used as a furniture factory, was heavily stocked on all floors with hundreds of bales of excelsior, waste paper and rags, piled to the ceiling. A stairway leading to the upper floors of the building, with an outside entrance on Twenty-Sixth Street, was used to good advantage by the firemen.

WHAT'S BURNING

THE following list includes fires of $25,000 loss and over in the United States and Canada, for the periods designated in the headings. These figures, compiled from telegraphic reports, are based on estimates made at the time, and are subject to later investigation and consequent revision. Taken as a whole, however, they give an approximately correct view of the losses incurred. The figures represent loss in thousands of dollars.

Week Ending November 14

	Loss in Thousands of Dollars
ST. LOUIS, MO.—Bldg. of Commercial Mfg. Co. damaged	30
LONG BRANCH, N. J.—Store of Harry Werner damaged	25
DECATUR, ILL.—West Macon Street residential property	50
LONG BRANCH, N. J.—Summer home of Dr. P. G. Hood	25
STROUDSBURG, PA.—Pennlyn Hotel destroyed, M. Merwin owner	40
FINDLAY, OHIO—Marvin Theatre building destroyed	125
MADAWASKA, ME.—Madawaska Hotel and National Cafe	45
CLARKSDALE, MISS.—Bldg. at 288 Sunflower Ave. destroyed	25
DREW, MISS.—Plantation dwelling of R. L. Wade, 4 mi. East	25
NASHVILLE, TENN.—Ridgeway Apts., Seventeenth Ave.	25
WISNER, LA.—Lang jewelry store, adjoining property	35
IRONTON, OHIO—Plant of Ironton Tobacco Co.	40
MILWAUKEE, WIS.—A. E. Martin Laundry & Machine Co.	40
TATE, WASH.—Whse. of W. P. Tate & Co. destroyed	25
VASSAR, MICH.—Post office and adjoining property	80
JONESBORO, ARK.—Main bldg. of Jonesboro Roller Mill	80
GREENWOOD, MISS.—Plant of Leflore Gin Co., Cotton St.	25
SPRINGFIELD, ILL.—Newspaper plant of Japan Advertiser	400
HUDSON, N. Y.—Bldg. of Veterans of Foreign Wars	25
HOLLYWOOD, FLA.—Property of Hollywood Machine Co.	60
LONG BEACH, CAL.—Clubhouse of Long Beach Country Club	40
CLEVELAND, OHIO—Plant of Corrigan-McKinney Steel Co.	80
MOUNT OLIVE, N. J.—Lumber Yard of John Wills, Inc.	40
THOROLD, ONT., CAN.—Several business buildings	35
FREEMANS POINT, N. H.—Bldg. of Atlantic Gypsum Co.	80
POINT CADET, MISS.—Plant of Biloxi Grit Co. damaged	25
LOCKHART, TEX.—Lockhart Culling Co., adj. property	25
INDIANAPOLIS, IND.—Clubhouse of Avalon Golf & Country Club	40
LOOGOOTEE, IND.—Plant of Loogootee Milling & Grain Co.	65
KLAMATH FALLS, ORE.—Property of Bertram Box & Lumber Co.	150
CINCINNATI, OHIO—Property occupied by Burton Furniture Co.	25
WORTHAM, TEX.—Peyton Bros. store damaged	25
OKLAUNION, TEX.—Cotton gin of Vernon Cotton Oil Co.	35
BALTIMORE, MD.—Warehouse of Crown Cork & Seal Co.	250
MINNEAPOLIS, MINN.—Bldg. of Brighton Elevator Co.	45
BERGER, MO.—Grain elevator of Dan Hare, Jr.	25
SHORTVILLE, N. Y.—Plant of Shortsville Evaporator Co.	30

Here is One Coal Fire That Was Not Appreciated

The large coal hoppers of the J. W. Peterson Coal Company in Chicago, containing about one thousand tons of coal, were destroyed by a night fire. The night watchman and his family were forced to flee in their night clothes.

Coney Island Resort Gets a Bad Scare

But one hundred feet from the famous Luna Park amusement center in Coney Island, New York City, four buildings were badly damaged by fire. Because of the proximity of the wooden structure of the scenic railway shown at the left, and the other highly inflammable materials of the amusement park, four alarms were sent in. The fire was stopped before any great damage was done.

NEWFIELD, N. J.—Mill of Robert Cleveland Sons	45
WATERLOO, ONT.—Mosher & Post feed store, adj. property	35

Week Ending November 21

DAYTON, OHIO—Plant of West Side Lumber Co.	35
LEWISTON ORCHARDS, IA.—Packing house of S. Hetten	85
SHALLMAR, MD.—Tipple of Shallmar Mining Co.	25
FREMONT, MICH.—Garage of William Dame destroyed	25
WATERFORD, N. Y.—Barn of Geo. R. Elder destroyed	25
TUXEDO PARK, N. Y.—Property of Robert Goelet	400
SUFFOLK, VA.—News-Herald bldg., adj. property	40
JAMESTOWN, N. DAK.—Capital Hotel, adj. bldgs	250
CAMBRIDGE, MASS.—Plant of Swett & Silbley, Inc.	45
OIL CITY, PA.—Meat whse. of Armour & Co.	45
STARKVILLE, MISS.—Bldg. at 101 West Main St.	35
WATERLOO, N. Y.—Plant of Geo. Marshall Barrel Co.	45
WESTFIELD, IOWA—Stock yard and adj. property	25
SALEM, ARK.—Plant of Salem Cotton & Gin Co.	25
FAHENS, TEX.—Store of J. M. Carbajol destroyed	25
ABERDEEN, MASS.—Annex of Parkway Hotel destroyed	35
ACWORTH, GA.—Property of M. D. Smith, 2 mi. N.E.	35
CHILTON, WIS.—Auditorium Theatre of John Steenport	30
WAUKEGAN, ILL.—Business building destroyed	300
OSWEGO, N. Y.—Delmonico Restaurant, adj. property	80
LIMA, OHIO—Plant of Lima Armature Works destroyed	35
RIVERTON, WYO.—Riverton Valley Grain Exchange	35
HAYNESVILLE, LA.—Haynesville Cotton Whse. and contents	80
LANSING, MICH.—D. & C. Furniture Co. bldg. damaged	35
WALNUT RIDGE, ARK.—Bloom Bros. dept. store, adj. property	125
WESTHOPE, N. DAK.—Bldg. of D. McGilvray Implement Co.	25
PHILADELPHIA, PA.—Mfg. property at Hancock & Somerset Sts.	35
GARY, IND.—Business property, 1052-56 Broadway	45

Four Buildings Destroyed in Marietta

Fanned by a stiff wind, a fire that started in the business section of Marietta, Ga., threatened to sweep the entire city. With the help of two companies sent by Atlanta, Ga., firemen were able to confine the loss to four business buildings.

The fire started about two a.m., and in a short time two other structures and an adjoining building were involved. For more than an hour the local department tried to control the flames, and a call was sent to Atlanta, through the mayor, for help. Later, the Mayor credited the timely arrival of the two companies from Atlanta, with having saved Marietta. He served as host to the fire-fighters at a late breakfast.

By six a.m., the fire was under control. A fire wall saved a large cotton warehouse in which there was several thousand bales of cotton. Ice which formed on the sidewalks and on the roofs greatly hampered the firemen. A rough estimate of the loss has been set at $250,000.

Geistown, Pa., to Form Department—A meeting has been held in Geistown, Pa., to formulate plans for forming a volunteer fire department.

Grand Rapids to Train Men for Arson Cases—Every fireman in the fire department of Grand Rapids, Mich., will be trained to detect arson cases. The plan was outlined by Fred P. Higgins, Assistant Fire Marshal.

Waters, Ex-Chief of Philadelphia, Dead—Edward A. Waters, formerly Chief of the Philadelphia Fire Department and a member of the department for thirty-nine years, died at his home at the age of eighty-one. He resigned from the department in 1913. He is survived by a daughter and one son.

HOW TO FORM A RURAL OR COMMUNITY FIRE DEPARTMENT

Four Steps in the Organization of Such a Department—Personnel and Apparatus—Importance of Discipline

By CHIEF T. M. YOUNG,
Durand, Ill., Volunteer Fire Department

EACH year our fire loss in rural districts has been growing by leaps and bounds until it reached the staggering figure of over $150,000,000 last year; 3,500 human lives have been sacrificed each year to appease the appetite of this demon fire. Too many people think that a farm fire concerns but two parties, the one insured, and the insurance company, but such is far from the facts, because in a farm fire, we cut off a line of production, which means county, state and national loss. Next it may ruin a fancy breed of live stock and again it strikes at the basic principle of Liberty in the halting of credit, and it causes an increase in taxation because you must make up the loss in property by an increase in your own taxes.

In this age we are using modern methods, and the farmer is no exception. Those used in farming twenty-five years ago are to-day obsolete. The farmer is forced to keep down his over head expenses to the minimum, so that a reasonable amount of returns may be shown on his investment, therefore the frame buildings are grouped together so that labor may be saved, with the result that when fire does come, it means the wiping out of the entire set of buildings. This modern age has also brought to the farm electricity, autos, and tractors, with the gasoline and oil storage problems.

What Is Found on a Visit to a Farm

Let us make an inspection trip to one of these so called modern farms, and see just what fire hazards can be found. We enter the farm yard, where we are met by the farmer. He assures us with pride that he has lived there the past forty years, and has never had a fire, and that all the modern implements are used in his farm work. We ask to see where he keeps his auto, and are shown the barn, with hay chaff, and hay all about or perhaps the corn crib with the corn husks or some other equally hazardous place. Usually, just ouside, so that it will be handy, we find the gasoline or oil barrels.

We inquire if he uses electricity and upon being informed that he does, ask to see the barn. While looking over the barn our attention is called to the fact that open wiring has been used, and we notice where the wiring has been extended. Upon closer inspection, we find that the wires have simply been twisted together, with no thought of solder being necessary to prevent vibration of the wires, causing a spar with a possible fire. We follow the wires, and find that they lead from the basement of the house, so we enter the basement to look over the electric equipment. We find pennies or nails used as fuses, little thought being given to the fact that fuses are the protection that is needed. Too often the farmer does these things rather than call in a capable electrician, thinking that he will save a few dollars. We take a moment to look over the heating unit. This we find has a smoke pipe that has seen several years service with the result that a great many rust spots show up, and we are able to easily push our fingers through, leaving a hole. We note a long smoke pipe leading into a chimney that was built years ago for stoves, and entirely too small to carry the added load of furnace without overheating. As we leave the house, we cast a glance back at the roof, which we note has wood shingles, and the chimney which has the mortar gone between the bricks. We enter the barn yard again, and hear a pounding noise, and find the hired man repairing the tractor on the barn floor, with the gas tank removed, and placed on a pile of hay. As we approach, he pauses for a minute to light a cigarette. As we leave we ask ourselves the question: Why is it that we do not have more farm fires?

Formation of the Rural or Community Fire Department

Most of these fire hazzards could and should be removed by fire prevention practice being put into effect, but all the fire prevention in the world will not put out the fire when it does come.

We must look to other sources for help, and with the rural communities from the Atlantic to the Pacific calling for help I know of no better, safer or saner way of helping these communities than cutting down their fire losses by the establishment of community or rural fire departments, properly manned, trained, and equipped.

Several methods have been advanced for the organization of community fire departments. I will give you but one, and this one has been worked out in several communities that I know.

In the establishing of a community fire department all that is necessary is the interest of two or three influential men in any community who are willing to sacrifice a little time. I have divided the organization work up into several steps so that it may be better understood.

First Step—Decide Type of Department

To decide the kind of fire department that will be necessary for adequate fire protection for your rural district, whether it be a chemical unit, pumper with booster tanks, or other kind of equipment, a decision must be made, so that the cost may be ascertained. Right here let me inject a few suggestions:

Go to a community or several communities in fact, where there are units in operation, or write the inspection bureau of your state, and then make your decision as to the kind of equipment you want. Do not purchase equipment without plenty of motor power, and clearance so that all roads, regardless of conditions, can be safely traveled. Do not purchase ladders of twenty-four-foot length, because in rural work you will find them too short. Get nothing under thirty-five-foot, preferably a three-piece trussed ladder, so that it may be carried on your truck.

Second Step—Ascertain Territory and Prospective Subscribers

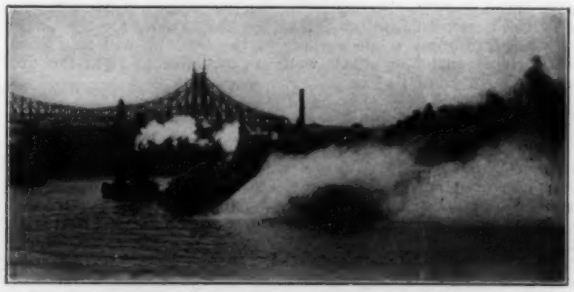
Get a map of your community, and with a compass make a circle twelve miles in diameter with your city or village as the center point. It has been proven time and time again that you are safe in taking in a territory six miles in each direction from your city. After this has been done, write the names of each owner of property within the circle, go over this list of names very carefully, and scratch or red pencil all the names of those you have reason to believe would not be interested in your project; after this submit the list of names to your banker with instruction to red pencil the names of those he thinks would not be interested, and for good measure charge off an additional 15 per cent of names. You will have left the number of prospective subscribers. Divide the number of names you have left into the cost of the proposed equipment, and you have the established amount that you will ask each person to subscribe.

Third Step—Take Up Questions of Housing, Manning and Maintenance With City Officials

Take up the questions of housing, manning, and maintaining the equipment with your city officials, and I am sure you will find them pleased to help for the use of the equipment, in case of fire within the city.

Fourth Step—Sell the Idea to Your Community

I suggest that you have printed a proposal showing the kind of fire fighting equipment you contemplate purchasing, the cost, how you propose to house, man, and maintain it, etc. At the bottom of this proposal have attached a blank note, and you are now all set to start the campaign drive for funds. Get six or eight solicitors, and furnish them with the list of the names of the people they are to call on. This list should include all the names, even those that have been red penciled, because you must give them a chance to get in, although you do not want them all, because nine out of ten times the fellow who does not subscribe is the fellow who has the fire. He is the fellow that you are



Burning Garbage Scow Moved to Mid-Stream

While it was tied to its dock on the East River,, a New York City, Department of Street Cleaning Scow, loaded with garbage, caught fire. It was towed into mid-stream to avoid danger to nearby shipping. Thousands watched the fire from the banks of the river.

planning on to pay the freight on your department, and be sure that he does.

I will outline briefly a few points in selling this idea to the farmer. Within this circle that I have mentioned, there will be anywhere from three to five million dollars worth of property. The proposed equipment may cost six to ten thousand dollars; when you think of asking that amount to protect three to five millions of dollars worth of property it does not seem so large.

The life of fire fighting equipment on the average is twenty years, and we will say that you have asked forty dollars from each subscriber. Is two dollars a year too much to pay for first class fire protection?

For the sake of argument, let us say that you will have three fires in twenty years, and in just one of these three fires you saved a house, which is insured in a mutual insurance company. You have saved an assessment being made, thereby you have saved the original cost of your subscription, and these Community Fire Departments respond to from five to sixty alarms each year.

The Fire Department and Its Personnel

No fire fighting equipment is any more efficient than the men who operate it. You may have thousands of dollars worth of fire fighting equipment, and with an inefficient fire department, your equipment or efforts will not amount to very much.

If Volunteer Fire Departments were under State Control, whereby certain standards would have to be met, I am sure our successes would be increased, but until such time comes we must continue to plug along trusting, through civic pride, that we can stimulate the officers of fire departments to higher ideals.

The old adage "You can tell what a man is by the company he keeps," can truthfully be applied to fire department circles, by paraphrazing it to read: "You can tell the kind of a fire department by the way its equipment is kept." Also, if officers are lax, and uninterested you will find just that kind of a fire department.

Need and Importance of Discipline

A few years ago it was my privilege to wear the uniform of Uncle Sam, and while doing so I learned the value of discipline. The application of this to volunteer fire departments is in my mind the paramount factor in the success of any such department. The Chicago *Tribune* of a few years carried on its editorial page a little quotation reading something like this: "May our Country in her relationship with foreign countries be always right; but our Country, right or wrong." This I would like to apply to Volunteer departments by stating, "may our chief be always right, but our chief, right or wrong." The position of the fire chief many times calls for "snap" judgment, and his judgment should never be questioned by subordinates, because he has his own idea of how best to carry out this plan of warfare against the fire, and as long as the results would be the same, as if carried out along your own ideas, it is the duty of the subordinates to obey, and not question. However, I do not wish to infer that wrong judgment should not be criticised, for with the fire schools that we now have, we can blame only ourselves for lack of knowledge, if criticism does come.

Record Should Be Kept of Each Farm

Another matter of great importance to rural departments is the mapping of each farm. By that I mean a diagram of each set of farm buildings, placed on a separate card, properly indexed, and filed in the fire station. This card should show a diagram of the house, barn, and all other buildings, showing the location of chimneys, gasoline barrels, and other items relating to fire hazards. It should also show the location of all available water supply, together with the gallonage. This card system has a two-fold value. It serves as a guide, for the officer in charge to study while enroute to the fire; he will also know at a glance just how much water is availalbe to fight the fire, and just where to find it.

Fire Alarm System Very Important

In establishing any Community Fire Department, you must not overlook your alarm system. Permit me to give a description of a new system we have just had installed. It consists of an independent switch-board placed at our local telephone office. The operator, when the alarm is received, inserts the telephone plug into this special switch-board, and can thereby ring the members of the entire fire department, both at their places of business and residences. At the same time the telephones are being used for general purposes. This system has proven very valuable to us.

Statistics of Rural Fire Departments

I have sent the following Questionnaire to some fifty or sixty Community or Rural Fire Departments in the Mid-Western States:

1st. Date of organization?
2nd. How many farm fires have you had?
3rd. How many times have you been able to save the building in which the fire first started?
4th. Have you, in all cases, been able to save the adjacent buildings to those on fire when you arrived?
5th. How many times did adjacent buildings burn?
6th. From your experience do you believe in farm fire protection?

The replies to these questions I have arranged as follows:

I received some twenty-five answers to my letters from departments showing that they had responded to 826 fires, not including false alarms.

In 383 the fire was extinguished in the building in which it first started, showing that in 46.37% of these rural fires the original buildings on fire have been saved. Not a bad average!

In only ten did the adjacent buildings burn, showing only 1.21%. This also is not a bad average!

Every department replied that it believed in farm fire protection, and I feel sure that this in itself means a great deal.

(Excerpts from a paper read before the Wisconsin Short Course in Firemanship at Madison, Wis.)

WESTCHESTER CHIEFS DISCUSS HAZARDS OF THE OIL BURNER

John G. Gamber Reads Paper Before County Association—Effective Ordinances Advocated—Next Meeting in Yonkers

THE hazards in connection with oil burning installations for heating purposes were thoroughly discussed at the regular meeting of the Fire Chiefs' Emergency Plan, of Westchester County, which was held at Fire Headquarters, White Plains, N. Y., on the evening of November 19. A directors' meeting preceded the regular session.

Chief H. E. McTavey, of Mt. Kisco, N. Y., President of the Plan, called the meeting to order at about 8:30 p. m., and introduced Commissioner of Public Safety Cook, of White Plains, who welcomed the members in a record speech of three words, "We greet you!"

The chair announced that word had been received from Chief Steuhl, of Eastchester, of the very serious illness of his father, preventing his attendance. On motion, the Secretary was authorized to send the sympathy of the members to the Chief.

A progress report was received from Judge Hoop, of Bronxville, on the matter of the protection of volunteer drivers from liability in case of injury to others. The report was presented by Secretary Riviere, who said that Judge Hoop had been seriously ill, but that at the next meeting he would be present and would outline the procedure to effect the protection of such firemen from personal liability. Assemblyman Ralph Gamble had promised to bring the matter before the New York State Legislative body when the time came.

The report of the meeting of the Board of Directors was then presented by President McTavey, who said that the Directors proposed that the dues for Associate Members, both Class A and Class B, be an initiation fee of $10 and the annual dues the same as the regular members, namely $2. On motion, this recommendation was adopted by the Plan.

The Chair announced the committee having the legal matters in charge to be Judge Harry Hoop, Chairman; Messrs. Ralph Gamble, Monte Smithson and Chiefs Travers and Mulcahey.

Chief Gibson, of Mt. Vernon, told of a jury's verdict in favor of a plaintiff who had sued the city for injuries from a collision with fire apparatus. This had been rendered in spite of testimony by a witness for the plaintiff that his car had evidently struck something a direct blow from the front, and also testimony that the fire apparatus was damaged at the side and showed no sign of frontal collision. The case, he said, would be appealed.

A demonstration followed by a representative of the Portable Light Company, of New York City, of three types of fire department lights fed by storage batteries.

President McTavey then introduced the principal speaker of the evening, John G. Gamber, formerly State Fire Marshal of Illinois, and an engineer of the Petroleum Heat and Power Company. Mr. Gamber brought to the members the greetings of the Illinois Firemen's Association. He read a paper entitled, "Fire Prevention and Sincerity." He dwelt especially upon the evils of incendiarism and the relation

that over-insurance bears to the matter. Mr. Gamber also stressed the necessity for effective ordinances. He said, in part:

"If we are going to get anywhere, we have got to get to the point where we will hold the fellow responsible for the preventable fire for damages that may occur to the adjoining property as well as the expense for the use of the Fire Department. He has no right to demand the use of the Fire Department of a city on account of his carelessness and the sooner we get rid of that fellow the better it is going to be for all of us. We are getting down to the personal responsibility of preventing fires.

"Now, how about your community? Are your ordinances adequate and up to date, or is your city one of the many which has no fire prevention ordinances worth the name? If you have ordinances, are you enforcing them? I said at the outset of this talk that the causes of fires are well known and that the remedies are equally known. Practically every cause of fire can be controlled by local ordinances, if they are enforced."

When a man has a fire through his own carelessness, Mr. Gamber said, people usually sympathize with him, when he should be ostracized and looked upon as a public enemy, which he is. Somehow we must bring the public around to this view of fire carelessness. Mr. Gamber pointed out the necessity for reasonable ordinances covering the installation and operation of oil burning heating aparatus. Regulation is needed to prevent the introduction of such inefficient and dangerous types of fly-by-night concerns. This is a matter, he said, in which Chiefs are vitally interested.

At the conclusion of Mr. Gamber's paper, Mr. Dexter, of the Petroleum Heat and Power Company, spoke and answered several questions as regards the proper installation of oil burning equipment, the proper size of tanks, as regards safety, etc. He spoke especially of the importance of perfection in the control apparatus. In answer to a question as to whether the rotary or gun type of burner were safer, he said that both were equally safe, provided the apparatus was of the variety approved by the Underwriters' Laboratories. The subject was discussed by Chiefs Mulcahey and Brennan, Lieut. Reviere, and several others. A vote of thanks was tendered to Mr. Gamber and the other representatives of the Petroleum Company at the close of the discussion.

On invitation of Chief Mulcahey, it was decided to hold the next meeting of the Plan at Yonkers, N. Y., on Wednesday, December 17.

Among the Chiefs present at the meeting were:

Ferris, Croton; Anderson, Cos Cob, Conn; Conway, East Portchester; Becker, Elmsford; Sullivan, Greenwich, Conn.; Jones, Hartsdale; McTavey, Mt. Kisco; Gibson, Mt. Vernon; Towle, Larchmont; Brennen, Pelham Manor; Dobbs, Scarsdale; Griffen, White Plains; Carlaker, Verplanck; Keller, Valhalla; Langeloh, Rye, and others, besides other officers of Fire Departments. The associates present were David Leerburger, Walter Kidde & Co., and Robert H. Lockwood, Editor, FIRE ENGINEERING.

N. Y. City Apparatus to Carry Large Monitors—Seven pieces of Mack apparatus now being constructed for New York City will carry 2000-gallon Monitor nozzles manufactured by Andrew J. Morse & Son, Boston, Mass.

Another Pumper Urged for Fond du Lac—Chief Russell, in his annual report to the City Commission of Fond du Lac., Wisc., urged the purchase of an additional pumper. At present there are two companies provided with pumpers.

Work Started on El Paso, Tex., Fire Alarm—Work has started on the $50,000 fire alarm system for El Paso, Tex. It is expected that the new system will be completely installed by the middle of January. Fifty new fire alarm boxes will be placed in the down town district. They will replace boxes that have been in service for the past thirty years.

Wants Man Arrested—Sends Fire Alarm

When fire companies of a first-alarm assignment rolled up to a box at Madison Avenue and 39th Street, New York City, no signs of fire were evident. But a young man near the box admitted that he had sent in the call.

"Where's the fire?" he was asked.

"There is no fire. I want that man standing down the block there arrested."

The case was turned over to a policeman who had arrived almost as soon as the apparatus. In court the young man said he had recognized a man who had absconded with some money. Since no policeman was in sight, and he was afraid that he would lose the culprit, he had turned in an alarm. The man was booked on a charge of grand larceny, and the boy was released.

Illinois Arson Ring Indicted

Ten persons have been indicted for arson in Franklin County, Ill., following an investigation of several weeks duration by deputies from the office of S. L. Legreid, State Fire Marshal. The indictments cover a series of fires in and about Christopher which have occurred during the last three years. Two of those indicted have already pleaded guilty and have received sentences of from one to twenty years.

Such a large number of indictments growing out of a single investigation is almost unprecedented. Upon completion of the investigation, State's Attorney Marion M. Hart impaneled a special grand jury, which speedily returned the indictments.

Burlington Receives New Pumper

A 1,000-gallon Seagrave pumper has been placed in service in Burlington, Vt., after passing the Underwriters' tests. The fire department consists of three stations with forty full paid men and the following apparatus: One 85-foot tractor drawn Seagrave aerial ladder truck, two 750-gallon Seagrave pumpers, one 1,000-gallon Seagrave pumper, one

Seagrave 1,000-Gallon Pumper in Service at Burlington, Vt.

American-LaFrance combination and one combination on a Selden truck equipped by Childs, one chief's car and one Ford ½-ton truck used for line work.

A drill tower has been erected and a regular firemen was sent to Boston for instruction. He attended and graduated from the Boston Drill School. He has been appointed drill master and drills are held regularly each month.

Apparatus and Personnel of the Burlington, Vt., Fire Department in Front of the Central Station

FIRE PREVENTION ORDINANCE FOR CITIES AND TOWNS

It Establishes Bureau of Fire Prevention—Prescribes Regulations for Hazardous Materials and Processes

(*Continued from last issue*)

THE following Fire Prevention Ordinance has been prepared by the Engineers of the National Board of Fire Underwriters and is recommended by that organization for adoption by cities and towns. While it is not expected that in all cases smaller cities will find need for an ordinance of such length, it is recommended by the Board that a complete set of regulations be adopted in all cases, for even though there may be no immediate need of regulation of a particular hazard, every growing community is sure to have these hazards introduced sooner or later, and it is better to be prepared for them than to develop unrestricted and then try to regulate them. The ordinance will be published in its entirety serially in FIRE ENGINEERING. *Following is a continuation of Part 9—Flammable Liquids:*

920. *Existing Manufacturing Plants.*

In existing manufacturing plants where persons are employed above the second floor, all elevator, stair and other wells or vertical openings communicating to rooms in which Class I and II liquids are mixed or stored in receptacles permitting escape of vapor, shall be inclosed and provided with self-closing fire doors or trap doors with heat releasing devices arranged to close doors automatically in case of fire.

921. *Manufacturing Plants Prohibited in Buildings Occupied as Dwellings.*

No manufacturing plant shall be located in any building used as a dwelling for more than one family unless all Class I liquids are kept in safety cans, not exceeding one quart in capacity, or in outside storage tanks as given in this Part, with no discharge inside the building.

922. *Kettles, Vats, Etc.*

Kettles, vats, saturators and other vessels used in manufacturing processes, and containing more than five gallons of flammable liquids, shall not be located within five feet of combustible material nor within five feet of any exit, unless two or more exits are provided, and all combustible floor thereunder within a radius of ten feet shall be protected with non-combustible covering. All kettles and other open vessels shall be provided with substantial covers arranged to close automatically in case of fire or which can be easily and readily placed in position, or shall be provided with an adequate automatic extinguishing device.

923. *Ventilation.*

Rooms in which Class I and II liquids are used in open vats, pans or other vessels, or in which Class I, II and III liquids are heated or otherwise treated in such manner as to produce flammable vapor, shall be well ventilated. Where natural ventilation is not sufficient the Chief of the Bureau of Fire Prevention may require forced ventilation with a vent opening of at least 20 square inches in the wall at the floor level near each open receptacle containing such liquids, or each heating device from which vapors may escape and opposite to any door or other air inlet. Such openings shall be covered with 2 x 2 mesh No. 16 galvanized wire web and shall be kept clear of all obstructions. From each vent opening a flue, of at least 20 square inches area and of non-combustible materials, built into the wall or floor or securely fastened thereto and so arranged as not to be subject to mechanical injury, shall conduct to and through a sparkless exhaust fan, to be run continuously, and which shall be of sufficient size to change the air in the room completely every three minutes. All discharge outlets of vent pipes shall be provided with 12 x 12 mesh or equivalent non-corrodible wire screen and shall be so located that they will not expose surrounding property and shall be acceptable to the Chief of the Bureau of Fire Prevention. Any other equivalent system of ventilation may be used when approved by the Chief of the Bureau of Fire Prevention.

924. *Extinguishers Required.*

Where flammable liquids are kept, used or handled a quantity of loose non-combustible absorbents, such as dry sand or ashes, together with pails or scoops; and chemical extinguishers or other extinguishing devices or materials shall be provided in such quantities as may be directed by the Chief of the Bureau of Fire Prevention.

925. *Storage of Barrels and Drums Limited.*

Within the limits given in Section 951, barrels and drums containing Class I, II or III liquids stored outside any building shall not be piled upon each other nor stored in a passageway or beneath any window and no open lights shall be permitted in any such storage yard.

926. *Drums and Barrels Must Be Kept Closed.*

Drums or barrels for flammable liquids shall have caps, plugs and bungs replaced immediately after package is emptied.

927. *Smoking Prohibited.*

In all rooms or parts of buildings which contain flammable liquids in open containers or in which the vapors from flammable liquids are present, or in which flammable liquids are used in any manufacturing process, the carrying of matches is prohibited and smoking shall be a misdemeanor. Suitable "NO SMOKING" signs shall be displayed.

928. *Lighting Shall Be by Electricity.*

Flammable liquids shall not be drawn nor handled in the presence of open flame or fire, but may be drawn and handled when lighting is by incandescent electric lamps installed in compliance with the "National Electrical Code."

Storage Tanks

951. *Storage Must Be Outside Buildings.*

Except as otherwise permitted in this ordinance, the storage of flammable liquids shall be outside buildings, in underground tanks or above ground tanks; except that the storage in tanks above ground and outside buildings is prohibited within the following limits: (Note: These limits to be specified; they should include the mercantile, and other congested districts and land near streams or other water ways which would carry burning liquid into congested districts.) Provided that for existing tanks within such limits, which are properly safeguarded and do not involve a hazard to other property, a permit shall be granted.

952. *Underground storage Limited.*

Tanks buried underground shall have the top of the tank not less than 2 feet below the surface of the ground, and below the level of any piping to which the tanks may be connected, except that, in lieu of the 2-foot cover, tanks may be buried under 12 inches of earth and a cover of reinforced concrete at least 5 inches in thickness provided, which shall extend at least one foot beyond the outline of the tank in all directions; concrete cover to be placed on a firm, well tamped earth foundation. Where necessary to prevent floating, tanks shall be securely anchored or weighted.

Where a tank cannot be entirely buried, it shall be covered over with earth to a depth of at least 2 feet with a slope on all sides not steeper than 1½ feet horizontal to 1 foot vertical.

The limit of storage permitted shall depend upon the loca-

An Oil Fire Makes A Very Hot Blaze

Fire enveloped the White Eagle Oil and Refining Company plant in Kansas City, Mo., following an explosion. The department finally succeeded in controlling the flames at the end of twenty-four hours. For a time the city's oil and gasoline section was threatened. Approximately 20,000 gallons of gasoline were consumed by the fire.

tion of tank with respect to the building to be supplied and adjacent buildings, as follows:

Maximum Capacity of Tanks for Underground storage

Location If top of tank is lower than all floors, basements, cellars, or pits of all buildings	Classes I and II and Class III Under 100° F. Flashpoint	Class III Above 100° F. Flashpoint
a. Within a radius of 50 feet	Unlimited	Unlimited
b. Within a radius of 40 feet	50,000 gallons	500,000 gallons
c. Within a radius of 30 feet	20,000 gallons	200,000 gallons
d. Within a radius of 25 feet	15,000 gallons	150,000 gallons
e. Within a radius of 20 feet	5,000 gallons	100,000 gallons
f. Within a radius of 10 feet	2,000 gallons	75,000 gallons
g. If within 10 feet of any building, and the top of tank is above the lowest floor, basement, cellar or pit of the building	550 gallons	50,000 gallons

h. Tank located beneath a building shall be below all portions of that building and is limited in capacity only in respect to other buildings as given above under a to g.

953. *Capacity and Location of Above Ground Tanks.*

(a) Outside the limits given in Section 951, the distance of each outside above ground storage tank used designed or intended for Class I, II or III liquids, from line of adjoining property or nearest building, shall in no case be less than set forth in Table I. For tanks exceeding 45,000 gallons capacity and in particular installations for tanks of any size these distances shall be increased at the discretion of the Bureau of Fire Prevention after consideration of the special features such as topographical conditions; nature of occupancy and proximity to buildings on adjoining property, and height and character of construction of such buildings; capacity and construction of proposed tanks and character of liquids to be stored; degree of private fire protection to be provided, and facilities of the fire department to cope with oil fires.

Table 1—Minimum Distance of Outside Above Ground Tanks for Class I, II and III Liquids to Line of Adjoining Property or Nearest Building

Capacity of Tank, Gallons	Minimum Distance to Line of Adjoining Property or Nearest Building
0 to 600	5 feet
601 to 1,000	10 feet
1,001 to 3,000	20 feet
3,001 to 21,000	25 feet
21,001 to 31,000	30 feet
31,001 to 45,000	40 feet

At marketing stations and elsewhere truck loading racks shall be separated from tanks, warehouses, and other plant buildings, by distances at least equivalent to those specified in Table 1.

The minimum distances between above ground storage tanks shall be in accordance with the following table:

Table 2—Minimum Distances Between Above Ground Storage Tanks

(Applies to All Classes of Liquids)

Capacity of Tank (or of the larger of the two tanks between which distance is to be measured) Gallons	Minimum Distance Between Tanks
18,000 or less	3 feet
24,000 or less	5 feet
48,000 or less	10 feet
75,000 or less	13 feet
100,000 or less	15 feet
Over 100,000	Distance equal to the diameter (or the greatest horizontal dimension if the tank is not cylindrical) of the tank, or of the larger of the two tanks between which distance is to be measured.

954. *Openings in Above Ground Tanks.*

Each above ground tank, inside or outside buildings, over 1,000 gallons in capacity shall have vent openings, excepting safety valves, provided with approved flame arresters. Unless vent openings are adequate to relieve any excessive pressure, a safety valve shall be provided or manhole covers shall be kept closed by weight only, and not firmly attached. The screens on openings may be made removable, but shall be kept normally firmly attached. The covers for manholes, handholes and gauge holes shall be made tight fitting.

955. *Above Ground Tanks Labeled.*

Above ground tanks for Class I and II liquids shall have painted conspicuously upon their sides in letters at least 2 inches high, the wording, "FLAMMABLE—KEEP FIRE AWAY."

956. *Material of Underground Tanks.*

Tanks shall be constructed of galvanized steel, of open hearth steel or of wrought iron of a thickness not less than that specified in Table 3. For liquids heavier than 35° Baumé, tanks may be constructed of concrete in accordance with the Regulations of the National Board of Fire Underwriters.

Table 3—Underground Storage Tanks

Minimum Thickness of Material

Capacity (Gallons)	Gauge (U. S. Standard)	Pounds Per Square Foot
1 to 285	16	2.50
286 to 560	14	3.125
561 to 1,100	12	4.375
1,101 to 4,000	7	7.50
4,001 to 12,000	¼-inch	10.00
12,001 to 20,000	5/16-inch	12.50
20,001 to 30,000	⅜-inch	15.00

Tanks of open hearth steel or wrought iron thinner than No. 7 gauge shall be galvanized.

For Class III liquids, if adequate internal bracing is provided, tanks from 12,001 to 30,000 gallons may be built of steel plate ¼-inch thick

With the approval of the Chief of the Bureau of Fire Prevention, tanks of copper or other suitable material may be used if after the necessary handling incident to installation they are equivalent in strength, rigidity, durability and tightness to the steel or iron tanks described above.

(To be continued)

Powdered Soap Forms Another Hazard

Tests conducted by the Experiment Station of the United States Bureau of Mines at Pittsburgh, Pa., have proven that the smooth, flaky soap powder, when suspended in the air, is a highly explosive substance. Tests conducted with soap dust in suspension produced even more violent explosions than were attained with dry coal dust, the cause of many serious accidents in coal mines.

The explosive hazard of soap dust is a serious factor only in the case of suspension of considerable amounts in air, such as might occur in the process of manufacture. Presence of this widely used cleaner medium in the family washing machine carries no hazard whatever.

Chief's Son Makes Aviation Record

Paul Clough, sixteen-year old son of Deputy Chief George W. Clough, of the Fire Department at Garden City, N. Y., established what is believed to be a record for light airplanes. Termed a powered glider, his 375-pound plane soared to an altitude of 11,800 feet in a two-hour flight.

Bridgewater Team Honored

The fire department of Bridgewater, Mass., tendered a banquet to the hose-coupling team of Bridgewater that won the Eastern Massachusetts Hose Coupling League championship for the second consecutive year.

P. Hildreth Parker, President of the Box 52 Association, of Boston, was present, as well as Chief Frank F. Dickinson, of Brockton, Chief Fred A. Clark, of Attleboro, and others.

A very much appreciated program of entertainment was arranged by members of the local fire department.

Fire Apparatus Delivered to Four Oaks, N. C.—Howe fire apparatus has been delivered to Four Oaks, N. C.

Fort Worth Station to be Finished Soon—It is expected that the Central Fire Station being erected in Fort Worth, Tex., will be completed by Thanksgiving Day. The formal opening is scheduled for the middle of December.

New Pay Basis for El Cerrito Firemen—Members of the volunteer Fire Department of El Cerrito, Cal., will be paid for each fire they attend. The ordinance provides that each fireman receive $2.50 a fire where water is used and $1.50 if water is not used.

Chief John W. O'Hearn Awarded Medal—Chief John W. O'Hearn, of Watertown, Mass., Secretary of the New England Association of Fire Chiefs, was presented with the American Legion distinguished service medal by the Watertown post in recognition of his service to the town and the war veterans.

Two Promotions in Boston Fire Department—Charles W. Nicholson, master steamfitter, has been promoted to Supervisor of Building Repairs of the Boston Fire Department. John D. McDonough, of the fireboat Angus J. McDonald, has been promoted to Master in Charge of Marine Service. Both men are transferred to the Maintenance Division

FIRE DEPARTMENT ACTIVITIES

Wolcott, N. Y., Buys Pumper—Wolcott, N. Y., has ordered a 750-gallon pumper.

Columbus, O., to Erect Fire Station—A new fire station costing $30,000 will be erected in Columbus, Ohio.

Cardiff, N. J., to Erect Fire Station—Plans have been drawn for a fire station to be erected in Cardiff, N. J.

New Stations Planned for Boston—Plans are being made for the erection of two new fire stations in Boston, Mass.

Fitzgerald, Chief of Childress, Tex.—F. E. Fitzgerald was re-elected Chief of the Fire Department in Childress, Tex.

Pumper Delivered to Paterson, N. J.—A 1,300-gallon Ahrens-Fox pumper has been delivered to Paterson, N. J.

E. Hartford, Conn., Buys New Pumper—East Hartford, Conn., has ordered a 1,000-gallon Mack pumper to be delivered early in December.

New Auto for Chief C. E. Swanson—Everett, Wash., will purchase a five-passenger sedan for the use of Chief Charles E. Swanson.

Fire House Opened in Poultney, Vt.—A number of Vermont Chiefs attended the opening exercise of the new fire station in Poultney, Vt.

New Fire Engine for Burlington, Vt.—A Seagrave pumper has been delivered to Burlington, Vt. A new $15,000 fire station has been erected.

Wakefield, Kan., Buys Pumper—A 300-gallon pumper has been purchased by Wakefield, Kan. The apparatus is mounted on a Ford chassis.

Pumper Delivered to Oak Park, Ill.—A Mack 1,000-gallon pumper has been delivered to Oak Park, Ill. A new ladder truck will be delivered soon.

Station Opened at Round Lake, N. Y.—The public was invited to participate in the formal opening of the new fire station at Round Lake, N. Y.

Alhambra, Cal., May Erect Station—Alhambra, Cal., is considering the erection of a new fire station and the employment of additional firemen.

Pineville, La., Has New Pumper—A Seagrave pumper has been delivered and accepted by Pineville, La., after it had passed the Underwriters' tests.

Work Started on Altoona, Pa., Fire Alarm—Work has been started on the installation of the fire alarm system for Altoona, Pa., that will cost $6,200.

Fire Apparatus Delivered to Jamestown, N. D.—A 500-gallon Boyer pumper equipped with a 40-gallon chemical tank has been delivered to Jamestown, N. Dak.

Pumper Delivered to Muncie, Ind.—A pumper, the first of two pieces of fire apparatus, has been delivered to Muncie, Ind. Delivery of the service truck is expected soon.

Fire House Opened in Laurel Gardens, Pa.—A large number of prominent fire officials were invited to attend the formal dedication of a new fire station in Laurel Gardens, Pa.

Needham, Mass., to Erect Fire House—Bids have been opened in Needham, Mass., for the construction of a combined police and fire station building. The lowest bid was $88,000.

Wolcott, N. Y., Wants New Apparatus—Wolcott, N. Y., is contemplating the purchase of a 750-gallon pumper. A truck will also be equipped with a 300-gallon pump and a booster tank.

Dover, Del., May Buy Service Truck—Firemen of Dover, Del., are considering the purchase of a city service truck. The apparatus will also be used as an ambulance for emergency cases.

Davenport, Ia., to Erect Fire House—Bids have been invited for the construction of a fire station in Davenport, Ia. The building will be constructed of brick and will be of fireproof design.

Fire Prevention Code Urged for Toledo—The adoption of a city building and fire prevention code by Toledo, Ohio, has been urged by an engineer of the National Fire Protection Association.

Death List of German Mine Increased—The total number of persons killed in the mine disaster at Alsdorf, Germany, has been increased to 256. Ninety-nine persons are still in nearby hospitals suffering from injuries.

New Nashville Fire Alarm System Approved—The Board of Public Works has accepted the new fire alarm system completed in Nashville, Tenn., by The Gamewell Company. The system and station represent an expenditure of more than $100,000.

Pumper Delivered to Rapid City, S. Dak.—A 1,000-gallon pumper provided with a 80-gallon booster tank has been delivered to Rapid City, S. Dak. A 75-foot aerial ladder was ordered at the same time but this unit will not be delivered before January.

Los Angeles to Erect Two More Stations—The Council of Los Angeles, Cal., has ordered the immediate construction of new fire stations in the Reseda and Owensmouth communities in the San Fernando Valley. Each of the stations will cost $25,000.

Jackson, Mich., to Buy Rural Apparatus—In 1925 apparatus was purchased for the protection of rural property about Jackson, Mich. The county pumper has been instrumental in saving considerable farm property. The purchase of another apparatus is contemplated.

Want More Funds for Warren, O., Station—The City Council of Warren, Ohio, voted to float an additional $2,000 bond issue to finance the construction of a new fire house. The Council provided $19,425 for the building but this sum was found to be insufficient.

Junior Fire Marshals Guests of C. of C.—The junior fire marshals of all grades, public and parochial schools in Evanston, Ill., were guests of the Chamber of Commerce for their good work in protecting the local schools. The youngsters were given tickets to a football game.

Farmingdale, N. Y., to Erect Fire House—An agreement has been reached between the Fire Board of Farmingdale and the two volunteer fire companies. The fire companies will turn over all their property, land, buildings and apparatus, and the village will purchase a site and build a suitable fire station.

Kiel, Wis., Farmers May Buy Apparatus—Farmers living near Kiel, Wis., are considering a plan to raise funds for the purchase of apparatus for protection of rural property. In all, $8,000 is to be raised. No charge will be made for a fire call other than the time of the four firemen who will arrive with the apparatus.

Ex-Chief Moore Defeated for Congress—Paul J. Moore, formerly Chief of the Newark, N. J., Fire Department and later a representative to Congress, was defeated for election to Congress by a candidate twenty-seven years old. The successful candidate is the youngest member of the House of Representatives.

Fire Station Presented to Middle Village—Fire Commissioner John J. Dorman, of New York City, formally presented a new fire station to Middle Village, L. I. The New York Fire Department band played during the exercises, and when the ceremonies were over, the public was invited to inspect the new building.

Fire House Opened in Muskegon, Mich.—The new central fire station in Muskegon, Mich., has been formally opened. A souvenir booklet entitled "A Tribute to Progress" was presented to all visitors. The booklet was dedicated to Chief Napoleon Belfy, who is rounding out forty-five years of service, and it covers a forty-year period history of the department.

Fire Captain Killed Near Forrestville, Md.—A volunteer fire captain was killed near Forrestville, Md., when apparatus from Upper Marlboro, Md., left the road and turned over. The driver tried to avoid hitting another car and could not bring his apparatus under control. The officer was pinned under the heavy machine and was killed instantly. Five other firemen were injured.

More Funds Denied Commissioner Goodrich—Albert W. Goodrich, Fire Commissioner of Chicago, was denied his request for 840 new firemen. The Finance Commissioner told Mr. Goodrich that if he would show them where the money is to come from, they will gladly approve the enlarged department. Mr. Goodrich said he would place his recommendations before the Governor's Unemployment Commission.

PROPOSED IMPROVEMENTS

Pacific Grove, Calif.—At the recent election a $15,000 bond issue for the purchase of a new fire truck was approved.

New Riegel, Ohio—At the election held Nov. 4th,, the tax levy for the purchase of fire apparatus was approved.

Strongsville, Ohio—H. V. Pope, Village Clerk, will receive bids until 12 o'clock noon, Dec. 1st, for the purchase of fire apparatus bonds to the amount of $7,000.

Avella, Penn.—The volunteer firemen have started a campaign to raise funds for the purchase of a modern fire engine, and 1,000 ft. of fire hose.

Galveston, Tex.—The city commission has voted in favor of the issuance of fire station bonds to the amount of $30,000.

Houston, Tex.—W. E. Monteith, Mayor, will receive bids Dec. 15th for fire station bonds to the amount of $88,000.

Hampton Bays, N. Y.—According to reports, the Fire Commissioners are planning to call a meeting of the taxpayers to vote on an appropriation of $30,000 for the erection of a fire station and the purchase of fire apparatus and equipment.

Klamath Falls, Oregon—At the election held recently a fire station bond issue to the amount of $70,000 was approved.

Montclair, N. J.—The erection of a $175,000 combination fire and police station on Park Street is at present under consideration. Commr. Geo. F. Lewis is Director of the Dept. of Public Works.

Atwater Township (Mail Atwater), Ohio—At the election held Nov. 4th fire apparatus bonds to the amount of $8,400 were approved. W. R. Stratton is Township Clerk.

Wanted

A capable sales representative for established Fire Apparatus House in Canada. Must be experienced selling motor apparatus and have clean successful record. Give full particulars. BICKLE FIRE ENGINES LIMITED, Woodstock, Ontario. 11-12.

Boston Awards Contract for Fire Boat

A contract for construction of a new fire boat was awarded by Boston to the George Lawley & Son Corporation, Neponset, Mass., for $326,660 with guarantee of delivery in ten months' time.

The vessel will be 125 feet in length overall with draft of 10½ feet. The beam over the guards will be 29½ feet and 28 feet beam over the frames. The hull will be of steel and in type the craft will be an oil burning steamer with speed of 12 knots.

The equipment will include two Babcock & Wilcox boilers; one compound engine of 1,000 h.p., and four turbine driven centrifugal fire pumps with total capacity for discharging 10,000 gallons of water per minute at 150 pounds pressure.

There will be seven deck guns, including one on a tower, and twenty hose connections. Seventy tons of fuel oil and thirty-five tons of feed water will be carried which will provide for continuous operation of the pumps for forty-eight hours, if desired.

Electric searchlight and flood lights will be carried and there will be radio transmitting and receiving apparatus. Two small boats and a Landry hose pontoon will be carried.

Plans for the boat were drawn by Arthur Raymond, associate naval architect with the firm of Fay, Spofford & Thorndike, of Boston, in accordance with ideas suggested by Chief Henry A. Fox and Supt. of Maintenance Edward E. Williamson, of the Boston Fire Department.

HARRY BELKNAP.

Indiana Sponsors Boy Patrol Movement

A boys' fire prevention movement to be known as the Indiana Guide Fire Patrol, in conjunction with the Boy Guides, sponsored by a magazine, has been announced by Alfred Hogston, State Fire Marshal.

Captain Z. C. Sanderson, Education Director of the Fire Marshal Department, has been working on this organization plan for several weeks. John J. O'Brien, Battalion Chief of the Indianapolis Fire Department, has consented to act as instructor. The boys will have lessons in fire prevention, fire fighting and safety, given through the medium of the *Farmers Guide Magazine*. There will be several ranks in the Patrol. At the end of eight months' instruction Mr. Hogston will present the boy having the highest grade in each county with a Junior Deputy State Fire Marshal badge.

"There are 20,000 country boys in the Boy Guides," Mr. Hogston stated. "We believe by incorporating fire prevention work in their lessons and giving suitable awards for the same, that a long step has been taken toward reducing country fire losses. The fire problem is gradually being solved in the cities and towns but rural districts show a serious need for fire prevention methods and education. The organization for the education of the youth of the farms will undoubtedly reduce fire losses materially."

Explosion Follows Ice Plant Fire

At least six persons were injured seriously in a recent explosion followed by a fire in the Catawa Ice and Fuel Company, of Spencer, N. C. The explosion threw bricks and wreckage several hundred yards. The plant was a total loss.

The plant caught fire from an undetermined cause, and the flames spread rapidly. The homes nearby were damaged from the explosion, which blew out windows and hurled bricks into the houses, damaging furniture.

No estimate of the plant's value was immediately available. It furnished ice each summer for thousands of peach cars en route from Southern orchards to Northern markets. The plant was owned by the Southeastern Ice Utilities Corporation, of Portsmouth, Va.

Flying bricks, particles of wall, and other wreckage literally mowed down the injured persons, who were standing some distance away watching the blaze. But for the keen eye of a fireman, dozens might have been killed. He saw a brick crumble near the top of the building and spread the alarm. Other firemen hurriedly forced the crowd of spectators to move back and a moment later the roof of the building crashed into the furnace below and the wall blew out.

Firemen on the other side of the building at the time of the crash escaped injury by some miraculous power.

D. G. SPENCER, JR.

New Trade Literature Received

The following literature descriptive of up-to-date methods and equipment for fire departments, has just been issued for general distribution, and can be procured by writing to the concerns mentioned. Those desiring additional trade literature in which they are interested can use our regular "Information for Buyers" pages, listed in the Advertising Index.

Byron Jackson Co., Berkeley, Cal.—Centrifugal Fire Pumps, describing the approved Underwriters fire pump for station installation, pumps for fire boats, fire department salvage pump and pumpers; illustrated, thirty-six pages and cover. Separate illustrated folders on horizontal belted pumps, salvage pump, and horizontal direct connected pump. Catalogue on Type S double suction, single stage horizontally split case centrifugal pumps, twenty-two pages, illustrated and cover. Bulletin No. 273 on multiplex centrifugal pumps, thirty-one pages, illustrated.

Mine Safety Appliances Co., Pittsburgh, Pa.—Catalog No. FA-2 on M-S-A First Aid Materials, illustrated, thirty-six pages and cover. Describes the line of first aid cabinets, appliances, bandages and accessories.

Rapid Construction Co., Los Angeles, Cal.—Bulletin No. 21 on equipment for extinguishing oil plant fires and other fires; ten pages, illustrated.

Globe Manufacturing Co., Pittsfield, Mass.—Globe Suits, a pocket-size catalogue illustrated in color; eight pages and cover. Describes line of firemen's coats, pants and boots.

CONVENTION DATES

Dec. 17—WESTCHESTER COUNTY FIRE CHIEFS' EMERGENCY PLAN. Next Meeting, Fire Headquarters, Yonkers, N. Y., at 8 p. m. Secretary-Treasurer, Lieut. E. Riviere, Larchmont, N. Y., Fire Department.

May 11-16, 1931—NATIONAL FIRE PROTECTION ASSOCIATION. 35th Annual Meeting, Toronto, Ont., Can. Managing Director, Franklin H. Wentworth, 60 Batterymarch St., Boston, Mass.

May 21, 1931—IOWA STATE FIRE CHIEFS' ASSOCIATION. Annual Convention, Ames, Iowa. Secretary-Treasurer, Chief L. R. Morris, Ames, Ia.

June, 1931—NEW ENGLAND ASSOCIATION OF FIRE CHIEFS. 9th Annual Convention, Boston, Mass. (Exact date to be announced later). Secretary, Chief John W. O'Hearn, 99 Main Street, Watertown, Mass.

June 17-20, 1931—WASHINGTON STATE FIREMEN'S ASSOCIATION. 9th Annual Convention, Port Angeles, Wash. Secretary, S. H. Jenkins, Bellimgham, Wash.

July 13-16, 1931—MONTANA STATE FIREMEN'S ASSOCIATION. 40th Annual Convention, and Firemen's Short Course, Bozeman, Mont. Secretary-Treasurer, D E. Moser, Bozeman.

A Course in Public Relations

As part of the studies at the fire college of Portland, Ore., the men will be given a course in Public Relations. The students will be taught how to properly protect the public's property and what should be done to make the persons affected by the fire as comfortable as possible after the fire. Other phases of the problem to be covered are:

Leaving the premises of places where a fire has occurred, in the best possible condition by making temporary repairs, to roofs, etc.

The use of mops, shovels, tar paper, lath, nails, etc., in order to clean and leave the damaged property ready for occupancy where possible.

Importance of firemen in order to avert panics. Responsibility of fire-fighters in case of major disaster.

Instructing the public on what to do in case of fires. Notifying absent property owners or occupants of fires.

Rescue and first aid to the sick and injured.

Providing the fire stations with full data so strangers may secure information in regard to streets, street numbers, public buildings, street car routes, buildings, business firms, theatres, etc. All subjects pertaining to points of interest in city and state. Tourist information.

Cooperation with all city, county and state departments.

Assistance to public in maintenance of auxiliary fire equipment.

The subjects of funeral services and burials, history of fire-fighting, city government and charter, traditions of Portland Fire Bureau, development of physical fitness, proper formations for parades and public functions, and safeguarding public assemblies are also covered.

Paper Warehouse Destroyed in Toronto

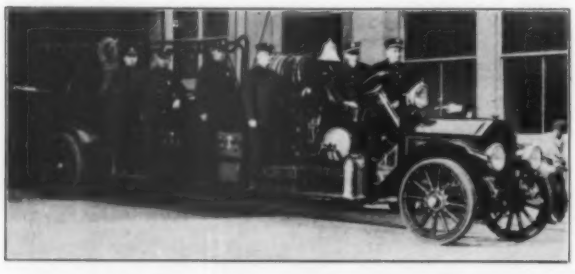
Fire originating from an unknown cause almost completely destroyed the five-story waste paper warehouse located at Front and Princess Streets, Toronto, Canada. The building, of mill-type construction, was built about forty years ago. All the floors were piled to the ceiling with baled paper. An alarm was turned in at 3:07 a.m., and brought two American-LaFrance 900-gallon pumpers, one LaFrance 85-foot aerial ladder, one LaFrance city service, one LaFrance salvage truck, one White hose truck and one Bickle hose truck, plus a White emergency car from the gas company. Platoon Chief Gunn and Dist. Chief Henderson responded. When they pulled up at the fire, flames were shooting out from the windows on the top floor at the north side and dense clouds of smoke were pouring from all parts of the building.

Chief Gunn ordered a second alarm to be transmitted at 3.12 a.m. This brought four American-LaFrance pumpers, two LaFrance aerial trucks, two Seagrave high pressure cars, three LaFrance hose cars, one Bickle hose car, gas and oil truck, and a motor shop car; also Chief Sinclair, Asst. Chief Duncan McLean, Dist. Chief See; and Department Surgeon Dr. Hill.

The fire was fought on three sides of the factory. The first alarm sections had four streams operating on the top floor from the lane on the north side. When the second alarm sections arrived they could not gain admittance to the building due to the dense clouds of smoke issuing from all parts of the building. Chief Sinclair ordered the truck men to ventilate the top floors and the building was covered with ladders on three sides. The men could not gain entrance to the top floors, due to the baled paper piled tight against the windows. Chief Sinclair had four streams off ladders into the top floor on the east side, and three streams off the roof; Chief McLean had five streams on the south side. After operating this way for several minutes the roof on the north side caved in and five men clung to the wall. Owing to the dense smoke it was feared they had dropped through the roof. Chief Sinclair and Asst. Chief McLean had the aerial ladder placed where the men were hanging on the brick ledge and the men were rescued.

After the collapse of the roof it was possible to get inside the building. Fire was burning on all floors. At 6:10 a.m. Chief Sinclair ordered the second alarm section back to their station. At 7:20 a.m. all but one hose company were ordered back. The fire was struck out at 12:10 p.m.

JOHN KARL LEE.



Rescue Squad Supercedes Elmira Inhalator Squad

A Rescue Squad has been instituted in the Elmira, N. Y., fire department to take the place of the former Inhalator Squad. An old American-LaFrance combination hose, chemical and ladder truck has been completely overhauled. It carries an HH Inhalator, two McCall 2-hour type oxygen helmets, wrenches, wire cutters, first aid kits, ropes, ladders, 650 feet of hose, a chemical tank and small extinguishers plus six salvage covers. Searchlight apparatus, cutting tools and gas masks are still needed and it is hoped they may be added in the future.

ARTHUR W. ESPEY.

New Foam Device Available

A new foam producing device, known as the Foamite Duomixer, has just been announced by the American LaFrance and Foamite Corporation of Elmira, N. Y.

The new device is used in a system known as the Foamite Dual Powder System. Designed primarily for stationary use, the Duomixer is a two-hopper device, one hopper being used for the "A" part of the Foamite Dual Powder, and the other for the "B" part.

The "A" and "B' parts of the powder are poured into separate hoppers. Foam, therefore, is not produced at the Duomixer as is the case with single powder generators manufactured by the company. Instead, the resulting solutions flow through twin pipe lines, terminating in mixing chambers or nozzle sets. With this set-up, the Duomixer may be located as far as 1,500 feet from the risk to be protected.

Foamite Dual Powder for use in the system, is packed in moisture proof steel containers, each holding fifty pounds.

Three models of the Duomixer are now in production. They are designated as models 120, 275 and 350. The numbers indicate the inlet capacity in gallons per minute at 100 pounds water pressure, the recommended operating pressure. With the exception of the sizes of the orifices, all models are identical.

In many ways, it is pointed out, the Dual Powder System, utilizing the Duomixer, will resemble the Foamite Two-Solution System which is today protecting many oil properties. It incorporates several of the features of this famous system, such as twin pipe lines, mixing chambers, hydrants and control valves. Of course, too, like the Foamite Two-Solution System, the Foamite Dual Powder System has a centralized point for the discharge of the solutions.

Although the commonest application for the new Duomixer will be in a fixed installation, it may, in an emergency, be used as a portable device. In such service, it requires twin lines of 2½-inch hose terminating in a Foamite nozzle set.

Inland Town Owns a Fire Boat

To the same classification of the much discussed Swiss navy, one may add the fire boat of Natick, Mass.—in fact claims have been made that it is the only inland Massachusetts town to have a fire boat in its Fire Department equipment.

But the craft that is housed in the fire station and is popularly termed the fire boat, is used exclusively to prevent drownings.

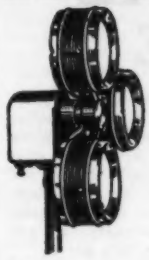
John A. Neary, Chief of the Fire Department, and his men developed the project and now the town has a strange looking but effective piece of apparatus in the fire station.

A 30-foot flat bottom boat is mounted on a trailer which can be attached to any piece of apparatus and then taken to the lake or river front. Even a ladder has been made that is attached to the bow of the boat so that firemen may climb back into the boat after having dived into the water. It has sets of grappling irons and an inhalator.

There is just one other way that this boat differs from others. Water has to be pumped into the boat instead of out of it. Once a week the firemen fill the boat with water to keep the seams swelled.

Cold Spring Harbor Erecting Station—The cornerstone was placed on the new fire station being erected in Cold Spring Harbor, N. Y., at a cost of $60,000.

The most Effective Combination of Warning Signals



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At night these three revolving red signal lights make identification of the apparatus instantly possible as far as light is visible.

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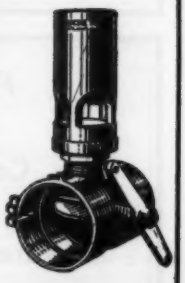

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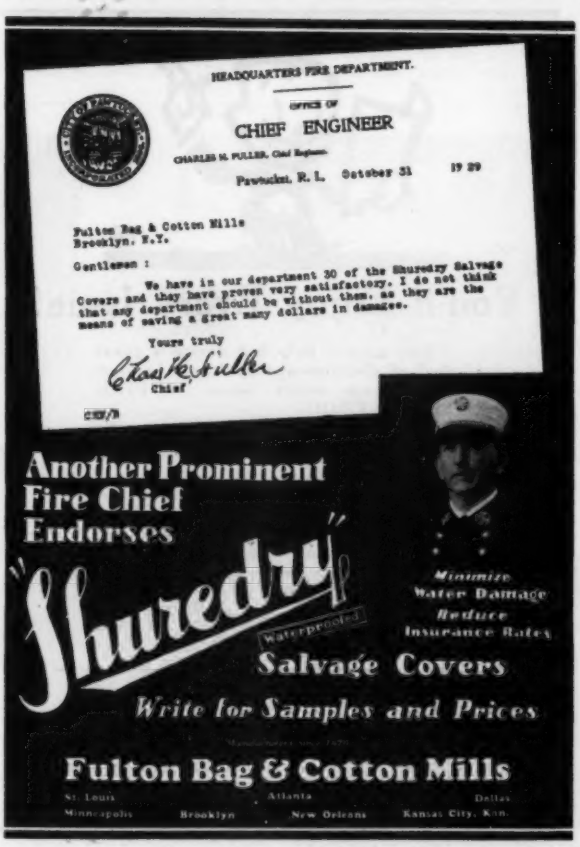
WARNING SIGNALS THAT WARN


HEADQUARTERS FIRE DEPARTMENT.
OFFICE OF
CHIEF ENGINEER
CHARLES H. FULLER, Chief Engineer.
Pawtucket, R. I. October 31 1929
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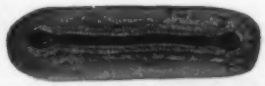

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D. B. SMITH & CO., 412 Main St., Utica, N. Y.
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Fire Protection Eng. Co., 369 Pine Street, San Francisco, Calif.

When Civil Service Laws are Valid

(*Continued from page* 1010)

among other things that Weber's resignation was not effective because the law provides that the Civil Service Commission may permit the withdrawal of such resignation at any time within ten days after the filing of the same, and that when, on December 18, the acting secretary procured the duplicate resignation from the commission this act automatically reinstated Weber. However, it is interesting to observe that the higher Court held that Weber's resignation was not made void when, after the latter's death, the commission re-delivered the notice of resignation to the acting secretary. This Court said:

"The fact that after the death of Mr. Weber the acting secretary of the fire department obtained the duplicate resignation filed with the civil service commission from the office of that body and placed it in his own desk cannot operate as a withdrawal of the resignation or a reinstatement of Mr. Weber for several reasons. No request to withdraw it had been made by Mr. Weber; no permission to withdraw it had been given by the commission; and the acting secretary of the fire department had no authority to withdraw it. Furthermore the death of Mr. Weber terminated the right to withdraw it; and the claim of his widow to share in the funds of the Relief Association must be determined by the facts as they existed at the time of his death. The fact that others removed the resignation from the files after his death can be given no effect in determining that claim."

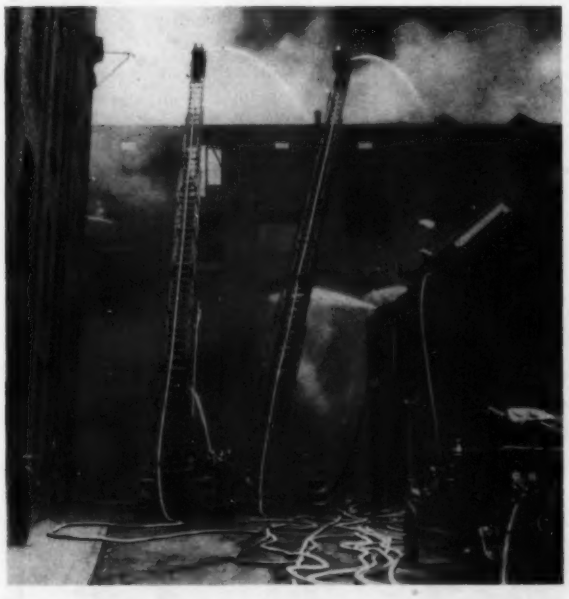
When Fire Truck Driver Is Negligent

Generally speaking, any traveler who negligently approaches a railway crossing is not entitled to recover damages for an injury, although the negligence of the engineer or other railway employes contributed to the accident. This rule is especially applicable if the testimony shows that the injured person is familiar with a dangerous condition at the crossing at which the accident occurred.

For instance, in Dean vs. Chicago, B. & Q. R. Company, 229 N. W. 223, it was disclosed that a truck driver was struck and seriously injured when crossing a railroad track. The track, for several hundred yards west of the crossing, runs through a deep cut which obscures the vision of a train approaching from the west. The vision of a traveler approaching the crossing continues to be obstructed until he reaches a point within a few feet of the track. On the day the accident occurred, and for a considerable period of time prior thereto, tall weeds and brush had grown up along the right of way between the tracks and the side of the cut, so that the traveler's view of the track was obstructed until he was within three or four feet from the crossing.

The injured driver contended that the railway company was negligent in failing to cut the weeds, and the engineer was negligent in failing to sound a whistle. However, the Court held the railway company not liable, saying:

"The plaintiff (injured driver) was thoroughly familiar with all the conditions which then existed at the crossing, having used it daily for a considerable period prior to the accident. . . . A person about to cross a railroad track must take reasonable precautions for his own safety. . . . It is always train time at any railroad crossing . . . cases may arise where, under the proven facts the person injured has so failed to act as a man of ordinary care and prudence that the Court must hold as a matter of law, that he has been guilty of contributory negligence."



The London Fire Department in Action

A serious fire broke out in a woolen factory in the Aldgate section of London, England. The photographs shows firemen playing hose streams from the top of aerial ladders.

Gamewell Adds to Pittsburgh Office

Charles S. (Sandy) Chapman and R. G. Wilson have been added to the Pittsburgh office of The Gamewell Company.

Mr. Chapman who is at present engaged in public address work in Western Pennsylvania, West Virginia and Eastern Ohio, has covered practically all the cities and towns in New England, speaking before Chambers of Commerce, Rotary, Kiwanis and Lions Clubs. He spoke at the convention of the New England Fire Chiefs at New Haven.

Charles S. Chapman

R. G. Wilson

A number of years ago he traveled throughout the country as a member of a prominent vaudeville team. He was also active some years ago in relief work, and he covered a large number of municipalities, speaking under the direction of President Hoover.

R. G. Wilson is Project Engineer for the Pittsburgh office. Since completing nineteen months' service overseas, he has had favorable contact with municipal officials throughout Pennsylvania, particularly in the western section. Mr. Wilson was district sales representative for several concerns which manufactured electrical apparatus, and was active in the signaling field before joining The Gamewell Company.

Cambridge Ends Hallowe'en Alarms

Chief James M. Casey, head of the Cambridge, Mass., fire department, has sent a letter to H. V. Kudlich, scout executive of the Cambridge Boy Scout Council, saying in part, as follows:

"I wish to express my sincere thinks to you and the Cambridge Boy Scouts who willingly gave their time to cooperate with the Fire Department by posting signs on the fire alarm boxes warning persons not to sound false alarms because of the danger to the apparatus and the men. It is a great pleasure to inform you that on Hollowe'en this year we did not have a single alarm, either bell or telephone. The wonderful work performed by you and the Boy Scouts will always be appreciated and such cooperation as this will be the means of entirely eliminating the pulling of false alarms in the city of Cambridge."

There used to be many false alarms in the city on that night and in 1925 a fireman was killed in responding to one of the false alarm calls. Since then placards have been placed on the boxes reading, "A false alarm may cost a human life; think it over before pulling the lever." In 1925 there were nine false alarms on Hallowe'en, three in 1926, two in 1927 and only one in 1929.

HARRY BELKNAP.

Pumper Delivered to Newton, Ia.—A Seagrave 500-gallon pumper has been delivered to Newton, Ia.

FALSE ALARMS

Courtesy of Collier's Magazine

Chief: "Hey, go back and finish that window."

FOREWARNED

It was quite a surprise to the boys at the station to see MacGregor check in during the evening, carrying two suitcases.

"What! Are you going away at this time of the year?" a friend asked.

"I'm not going away. The ladies are holding a jumble sale, and I am taking my clothes down to the station until the thing is over."

A telephone operator can never be classed as a knocker—she's always plugging for somebody.

HOW SILLY

The wife had made one of her yearly visits to her folks and, of course, Jeeves welcomed the change. He had a number of the boys up to the house for a party. But when the household manager returned her suspicions were aroused.

"William," she asked, "how do you suppose the dozens and dozens of empty bottles got into our cellar?"

"I'm sure I don't know, love. I never bought an empty bottle in my life."

Scientists say that city air is much worse than country air. Possibly because so much of it passes through saxaphones.

HALF STEP

The boys noticed him as he came into the station in the morning.

"Good morning, Bill! Where'd you pick up that funny little step."

"Funny step, nothing. I just made the station in time. I'm losing my garter."

"Another magician," said the traffic cop as he watched the man turn the flivver into a lamp-post.

POOR POLLY

Most of the old-time smoke eaters have a vocabulary that no one has ever attempted to catalogue. But that is aside from the story. The main point is that Smith, lucky dog, was loved by his wife—not only that, she believed in him. The boys were talking about Smith.

"He's got a wife who thinks the world of him."

"Does she?"

"Yes, she even believes the parrot taught him to swear."

When a rich man loves them and leaves them, he usually leaves them plenty.

ALL PRESENT

The newly appointed fire commissioner, somewhat of a fishing enthusiast, had invited the chief officers of the department to his home for dinner.

"You have a splendid collection of mounted fish—but what are the long empty panels for?" asked a guest.

"Oh, those are the ones that got away," replied the commissioner.

An advertisement in the *New York Times*: Apartment to share—W. 86th Street—Lady, pleasant, sunny (3 exposures).

NOT SURPRISING

A member of Engine 8 had purchased merchandise from an extended payment house, contrary to department rules, and because he had to buy some accessories to his outfit, he lapsed on several payments. He received a letter:

"We are very much surprised that the money we have demanded so often has not yet arrived."

He replied soon and to the point:

"You do not need to worry; I have not sent the money."

ALTERNATE PLAN

During a spring thunder storm, two badly frightened boys ran into the open doorway of the fire station for shelter. They gazed in wonder at the forked lightning dashing across the sky.

"How did lightning work before electricity was invented?' asked one youngster.

The other answered, "By gas, I expect."

The number of days left to shop before Christmas doesn't worry us—it's the number of days afterwards they give us to pay the bills.

FULL DATA

A German who could not find employment at his regular occupation, took a job as porter to do odd chores at the station and to care for the jail located in the same buildings.

When he received his first pay check, he went to a nearby bank to get it cashed. The check was made out to Gustave H. Schmidt. He endorsed it without the middle letter, and the teller called his attention to it saying he had forgotten the "H".

"Ach, so I haf,' he said very ill at ease. Seizing a pen he added, "Age 42."

HIS COMPLAINT

Remember that old rule, once a fireman always a fireman! Now it so happened that one of the boys who had run afoul of the law was sentenced to the jail for a few days. But he could not forget his early training. He went up to the prison office and said that he had a complaint to make.

The warden asked, "You say you have a complaint to make? Well, what is it?"

"There ain't enough exits."

AND, LIEUT, HE SAID TO ME "MY BOY, I FEEL THAT YOU'VE DONE ME A WONDERFUL FAVOR. MAY I, AS A TOKEN OF MY APPRECIATION, THAT IS — IF IT WONT OFFEND, URGE YOU TO ACCEPT THIS SLIGHT GIFT ? NOW I NEEDED $500. BADLY, BUT -
HEY! FRANK! A GAS MASK! QUICK!
SQUAD I

—Drawing by "Art" Espey

Lieutenant: "There's one in every fire house."

YOUR CATALOG PAGE

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4 Aerial Ladders, Detachable.
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14 Battery Zincs for Fire Alarm Batteries.
15 Bells, Fire Alarm, Municipal
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17 Boxes, Gongs, Reels, Registers, Fire Alarm.
18 Brakes, Air.
19 Brake Linings.
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23 Chains, Non-Skid Fire Apparatus.
24 Chassis for Fire Apparatus.
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29 Combination Chemical & Hose Cars.
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31 Cutting & Welding Equipment, Electric.
32 Deluge Sets.
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34 Extinguishers, Calcium Chloride.
35 Extinguishers, Carbon Dioxide.
36 Extinguishers, Soda-Acid.
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110 Whistles, Fire Apparatus.
111 Wrecking Trucks.

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This page is a feature of every issue to make it convenient for you to get all this information without cost to you and without placing you under any obligation whatever to buy from any particular manufacturer.

You only have to run down the list of equipment and mail in the coupon below with your name and address and the numbers that indicate what you are interested in and we will then have the leading manufacturers of this equipment send you complete information direct—so why not let us help you get what you want? We are glad to be of service.

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11-26

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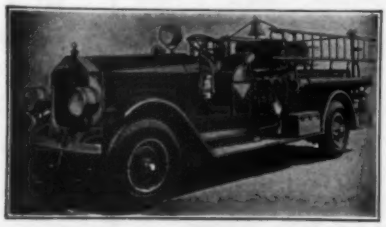

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	PAGE
Ahrens-Fox Fire Engine Co.	1001
American-La France & Foamite Corp.	*Inside Front Cover*
American Rubber Mfg. Co.	1034
Bi-Lateral Fire Hose Co.	1028
Bodyguard Mfg. Co., The	1032
Boyer Fire Apparatus Co.	1032
Braxmar Co., C. G.	1027
Buckeye Iron & Brass Works	1027
Buffalo Fire Appliance Corp.	999
Clay, Inc., John H.	1028
Darling Valve & Mfg. Co.	1002
Eddy Valve Co.	1032
Eureka Fire Hose Mfg. Co.	*Back Cover*
Fabric Fire Hose Co.	*Front Cover*
Fulton Bag & Cotton Mills	1027
Globe Mfg. Co.	1034
Hedberg, J. N.	1028
Hewitt Gutta-Percha Rubber Co.	1032
Information for Buyers	**1031**
Maxim Motor Co.	1032
P-B Products Co., Inc.	1032
Rensselaer Valve Co.	1032
Smith & Co., D. B.	1028
Sterling Siren Fire Alarm Co.	1028
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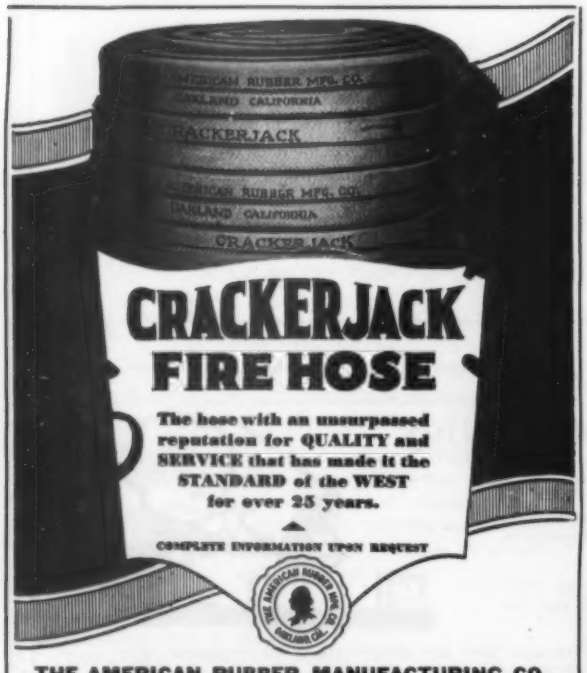
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